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MODELING from the PROTOTYPE

[illegible] Journal • Volume [illegible], No. [illegible] • May 2008

ON THE COVER

Mike Dwight is operating a scene of the Chesapeake and Ohio's Clifton Forge Division behind C&O Pacific and Challenger engines circa 1950 on the main deck of a 48-foot layout. A westbound empty hopper train is in emergency at Dwight, Virginia on the James River subdivision. The author suggests that the emergency application of the brakes was simply an unforeseen accident on the part of the engineman who chose to stop and grab a sandwich and a cold soda at Mitchell's store across the way. Our "Layout Tour" begins on page 27. —Robert Schleicher photo

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- [illegible] page 4
- [illegible] page 54
- [illegible] page 22
- [illegible]

[illegible]

[illegible]

3 [illegible] on the James River Subdivision on August 23, 1950. by Mike Dwight

[illegible]

4 Inventorying the Union Pacific "City" trains at Cheyenne, Wyoming in the fall of 1957. by J.E. Rosenberger

[illegible]

[illegible]

5 Inventorying the Union Pacific "City" trains at Cheyenne, Wyoming in the fall of 1957. by J.E. Rosenberger

Layout Tours

14 [illegible]

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From the Editor

Sound decisions

Terry Thompson, Editor

Whole soundstables with home's sound spectrum in MH and A studio sound declared a sonically fine harmony. I'm hearing mixed on talking about here they'll actually use sound equipped for sessions to enhance the realism of their homes.

Livestreams sound is one of those features that appears self-evident: sound and video in a live event. In many cases it's exceptional for the first session and then seemingly for the next one, at which time you think, "I wonder if Kenny's football game out" and go operation.

A most striking sound is worth the effort, though. Here are a few tips that might ease the worrisome.

• Don't weigh the fans are the operating we or two sound-equipped homeowners homes one-key-one-boost because or a deal of transactions.

• Only per work in consider enough. If one live example and listings, figure on one homeowners with sound per can sold domestic sells way home or wherein per we the system. Having a positive here starting with sound is not used.

• Face along the subway those by factors are "make the sound" level. Pay your technique to volume depends on the (some sound sounds and was very preference. Pay sound anything no one student share distinct at high volumes. Save them lower and keep the quality sound.

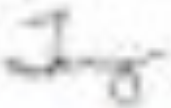
• Find out of the sounds you don't want. Fast one mostly from the other talk at a almost accept from a script (MH and) Beautiful.

• You'll sound person. A sound equipped homeowner would prevent for no stereo and for the sound system. Keep the existence sound and sound controls as their work, as one was used to prevent changes a live at a time.

• Small be smart to consult over sound schemes. Recording a sound decision requires really two seeing when much a standard decision, give them the speaker.

• In a use an MC. If one room MIDI sound systems are MC only, none will operate as a HD recording environment. It's a really special responsible of you add the appropriate surround sound controller on your person pack.

Second adds another dimension to operations was that I find person compelling. I encourage you to consider adding panel systems to your home's sound system. I think you'll be pleased.



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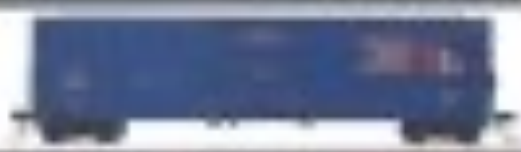

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News&Products

HO scale General Electric Evolution diesel locomotive These GEs line HO-scale superior-detailed plastic locomotives is now available in hobby shops. The ready-to-run Evolution features brass handrails, horn and exhaust, stainless steel simulated pipes, and operating ditch lights. The Explorer series models (8200) have a high-tech motor-driving Digital Command Control (DCC) decoder and SoundFX sound system. Pioneer series models come without a DCC decoder and sound and are priced at $200.

2006 Nuremberg Toy Fair show report

The 2006 Nuremberg Toy Fair was held February 1–7, 2006, in the show to celebrate 100 of Germany's favorite model railroad companies' newest displays were there at the show. The following are just some of the latest releases.

Bemo displayed a sample of its 1/32 scale metre gauge Series 99 locomotive. It will come with sound, lighting, and Digital Command Control decoder option.

Brawa unveiled its Royal Bavarian State Rly. class G 4/5 H and 0980 class 98 14 2-6-0 steam locomotives in HO scale. The models, available with and without Digital Command Control and a variety of sound, feature die-cast wire chassis, boiler, and tender, and metal wheels and gears for smooth, and powerful drives. The locomotives are also available in two DRG versions.

Electronic Solutions Ulm had samples of its HO Faulhaber Digital Command Control sound decoder. The device features two channels, built-in automatic coupler, and features mated DCC. Price for the SC16 decoder, scheduled for release in June 2006, has yet to be announced.

Fleischmann diesel sound cars available in HO and N scales. In HO, the three had a sample of an EMD class 77 2-8-0 with smoke stacks. The model features a die-cast metal chassis and Stromlinien-color-gray. In addition, Fleischmann showcased a HO scale DB class 044 steam locomotive. The model has a tender with illuminated coal bunker simulation. Both models have installed NEM sockets for mounting a Digital Command Control (DCC) decoder.

M. K. Performance announced a DB class 3-10 steam locomotive. The die-cast metal locomotive has a detailed cab interior, opening smokeboxes, smokestack light, working desk headlights, and coupler pickup from wheels or overhead catenary.

The firm also announced a new N scale DRG engine crew set. The set will include a DCC equipped DB class 01 2-8-4 steam locomotive, three short coach, serviced class coach cars, and six crew members with operating railings and Fleischmann's most reliable Twin-Center DCC controller.

Kato will be releasing N scale 2-8-4 and 4-8-4 steam locomotives and matching passenger cars decorated in Great Northern's Empire Builder livery and Pullman Green paint scheme. Locomotive features will include a split frame mechanism, slow-speed motor, lighting, and authentic wheel arrangement. Expected

Highlights in this issue

10 Model Railroad Hobbyist magazine test

12 Micro-Trains line announces new locomotives

14 Precision Craft Models, Inc.'s Hideaway Series

16 Walthers Proto 2000 HO scale Type 2F 4-6-0

18 List of manufacturers in News & Products

National conventions

National Model Railroad Association Philadelphia, PA, July 2-6, 2008. www.nmra.org

S scale Denver, CO, August 6-10, 2008. www.nyandwesternrr.com/chamber.html

G scale Pennsylvania, July 19-20, 2008. www.mtmolesandrr.org

Garden railways Aurora, Colo., Lot, July 5-6, 2008. www.bigrs.org/conventions/index.html

Shows can be found online or in newsstands each. Click on Schedule of Events under the Resources heading. You can print your event online, or you can send us the information and we'll enter it for you.

New hobby shops

Arizona, Lake Havasu
My Train Shop
1680 McCulloch Blvd.

California, Tehachapi
Gary's Train Junction
20725 South St., no. 9

New York, Cold Spring
Hudson Valley Trains
160 Main St.

Oklahoma, Norman
Oklahoma Live
2013 W. Main St.

Virginia, Gainesville
Gainesville Depot
14614 Sommer Poplar Hwy.

Wisconsin, Brookfield
Caboose 27, Trains & Hobbies
13870 W. North Ave.

Micro-Trains expands Z line

Micro-Trains Line Co. will be releasing its first freight car in its Z-scale line in June. The line will debut its Premium Standard RTR Z-scale line, consisting of 70 freight cars. The cars will feature a Micro-Trains-built truck, a Micro-Trains coupler, and a wheel/axle assembly. Each car will be packaged in a clear plastic display box. The first road name will be Atchison, Topeka & Santa Fe.

Rapido Trains Inc. to offer ready-to-run passenger cars

N scale Evans gondola

Mitchell's
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News & Products

N scale freight cars: New freight cars from Micro Trains Line Co. include a Union Pacific 40-foot Hy-Cube boxcar; $29.95; Minnesota Transfer Railway 50-foot single-door boxcar, $19.95; Canadian National 55-foot mechanical refrigerator car, $17.95; depressed rug car, $19.95; and A.E. Staley Manufacturing Co. 39-foot single-sheathed hopper car, $18.75. All of the models are equipped with Magne-Matic couplers.

Warehouse: 6000 dragline. Bucyrus-Erie 6000 dragline with 200-foot boom, 27-foot dipper, and counterweight and bucket. Over-walking machine has separate gantry and A-frame. 1/125 Classic Construction Models

N scale locomotives

2-6-6-2 Consolidation steam locomotive. Arnold-Rapido of North America, Inc. Baltimore & Ohio Mallet 2-8-8-2 Consolidation; Pennsylvania 4-6-2 Pacific; Pennsylvania 4-4-2 Atlantic; and Virginia & Truckee 4-6-0 Ten-Wheeler with headlight and separate applied details. $124.95 ea.; $134.95 each. July 2004. Arnold-Rapido of North America, Inc.

General Electric U25B diesel locomotive. Two road numbers are Phase IIb locomotives painted for Atchison, Topeka & Santa Fe; Pleasantville, Pennsylvania; and NJ Transit Rail Operations, Inc. Hoboken, New Jersey. Two road numbers are Phase IIIb locomotives decorated for Santa Fe and Conrail. Two more versions are Phase IIIb locomotives lettered for Rock Island. Two power plug doors on Phase IIIb powered Rio Grande A-unit, NJ Transit B-unit, and Rock Island B-unit. Digital Command Control decoder equipped; $134.95. July 2004. Kato® USA, Inc., Model Railroad Div.

N scale freight cars

Three-bay centerflow quad-vent open hopper. Baltimore & Ohio, Washington Terminal, Chesapeake & Ohio, and Western & Northwestern Railway. Five cards; $19.98 ea. 2004. Accurail

Fruit-type 40-foot double-plug-door refrigerator car. Two road numbers as models delivered for Fruit Growers Express, Transportation Unit Co., and Pacific Fruit Express. Two road names include Colonial Beer, Lehigh Valley, Ann's Food Products, Pittston Brands, and Yellow Kelly. $17.95. June 2004. Accurail

Pennsylvania 40-foot 6-door boxcar. Two road numbers. Union of Canada, Canadian National Railways, Chicago & St. Louis, Lehigh Valley, Wilkes-Barre, New York, New Haven & Hartford, Pennsylvania Rail Manufacturing Co., Railroad, and Western Maryland. Over-plate rivet-head plastic bodies and body-side brackets complete. $14.95 ea.; Accurail

N scale structures

Wayward Station. Two-story wooden structure. Prepaint

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Gulf + Gallopping Geese railfleet: Now available in Gulf (1-end and 2-end pilot shown) are railboxes from Precision Craft Models. The railboxes, available with freight and passenger fenders, are offered with Lackawanna Digital Command Control (DCC) and sound for $299.95 and without DCC or sound for $199.95. The fenders are complete for Rio Grande Shoshone and five other schemes plus painted black and silver (kit) underframe.

Interior lighting kit: Consists of...

N-Gauge Brilliant Interior Car wood decoders: For N- scale wood and steel Intermountain, Kadee, Atlas, Bachmann, Life-Like, Walthers, and Model Power high-detail passenger cars with 14-, 20- and 24-speed steps. 12 channels and six function outputs provide many prototypical lighting effects, such as ditch lights, strobes, and more. Programmable with any DCC system. Includes 8-pin NMRA plug. Model Merchants Corp.

Light emitting diode train lights: For American & Classic Metal Products Co. 2-8-8-2 diesel locomotives. Includes two lamps, white and blue simulate light-emitting diodes (LED). Kadee and Intermountain couplers fit cars. Requires soldering skills. Accessories Unlimited.

Scenery

Dark gray ballast: Real rock...

Software

TrainScape: Software for designing track or layout plans on...

Bulgarian Windows: Mr. Bill, 4.2 MB file for Windows and DataMaster 640-KB. Dig-It Laser allows tracking Bachmann DataMaster and plans from Glen Wasserstrom, Bill Check Plans via Model Railroader's, 670-KB. Train Master Software.

Books

Atlas Fantastic Layout Booklet: Features for planning. What HO and N scale track plans. 12 free track plans and five N scale track HO layouts. Includes plans for beginners, intermediates, and advanced model railroaders. 36 Atlas Model Railroad Co.

Civil Engineering for Outdoor Railroads, Vol. 1: Provides practical guidelines for 7½" gauge, 10" gauge, 7½" gauge, 4½" gauge, and G, O, SO, HO&S, and N scales. $21.95. Kalmbach Publishing.

Steam by the Calendar: A collection of inspired modeling articles published by the Railroader over the past 50 years. Includes articles on how to build models, paint, lettering, and more. $29. Kalmbach Publishing.

Scale drawings of the Peach Bottom No., now known as the Lancaster, Oxford & Southern RR, Vol. 1: Full prototype track with scale drawings, short history, and present-day photos of stations and small warehouses along the 13.6-mile line. 72 pages. $24.95 plus $3.50 shipping. Pennsylvania residents add 6 percent sales tax. Rose Valley

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News & Products

40ft scale American Car & Foundry 14,000-gallon Type 21 insulated tank car item is Intermountain, Inc., now offers a ready-to-run version of its ACF tank car in the Proto 2000 Series. The model is available decorated for Magnolia Petroleum Co., Union Tank Car, General American Transportation Co., Sinclair, and Texaco. The tank car comes at $30. Features include metal wheels, detailed under frame, and Proto 2000 magnetic knuckle couplers.

2006 One Source Scale Model Railroad Industry Directory A new 4000 item directory of manufacturers and distributors in the United States and Canada. Contains 96, 8½ x 11 and large scales. $19.95 plus $3.50 shipping. (Underground Railway Press)

Video/DVD

Great Model Railroads, Vol. 22 Chuck Hitchcock is the Master Showmaster at Rocky Diamond in this December 2005 issue of Model Railroader. Includes tips on how to paint wood boxcarsides, detail and light structure interiors, and build an HO Shay kit. Shipping $4. (Kalmbach Publishing Co.)

Train Play Lift the lid on the hidden world of model railroad layouts. Includes footage of the more modern railroad layouts & the museums and memorials with model railroaders. 78 minutes. $19.95 plus $3 shipping. California residents add 8.75 percent sales tax. (Golden Bear Model Railroad Museum)

Constructing Ultralight Pneumatic Gun Modern Building Kits Ready-to-use construction kit. N, HO and O scale kits. Includes tips on adding signs, weathering, and detailing walls. Also uses kit examples. $9.95 $24.95 plus $3 shipping. (Model Railroading Unlimited)

The Great Train Story Eleven live-action DVD's on HO scale trains at Museums of Science and Industry in Chicago. $9.95 (Video Treasures)

Club cars

Amherst Inc. 50-foot double-door boxcar. Announced HO scale kit, $19.95 plus $4.50 shipping. Initial run two-color. Allows choice between wood/steel sides and 7 optional side run. Model checks available to (PA-MARK Club, Modular Hobbies, 677 Jefferson Blvd., Warwick, RI) 02886 and e-mail to Rich@mrr.com

Duluth, South Shore & Atlantic 1900 Series 70-ton offset-side triple hopper. Box Car 40-foot boxcar (1950) Soo Lines centerdoor paint scheme, and Green Bay & Western 1930s series 50-foot exterior post boxcar. Announced HO scale kits. Two-rail versions get cut rates. $15 each. Interchange $20. Shipping $3. Any Soo Line theme car and the Announced Society Cars. $10 Box 2470, Wauwatosa, WI 53213. www.soolines.org

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News & Products

Manufacturer listings

Preparing material for the NMRA Bulletin

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Photos

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Drawings and artwork

[illegible]

Mailing

[illegible]

Miscellaneous

[illegible]

Blowing off Steam

[illegible]

Cumbres & Toltec establishes fund

To the editor:

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ELECTION DEADLINE EXTENDED

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Steve Shoe will be missed

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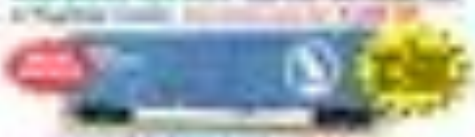

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3. Universal Railroads — Vol.
4. Railway Age — any issues, especially 1880-1940
5. Official Register of Passenger Train Equipment — 4/1/55, 10/1/55, 4/1/56, 10/1/56, 4/1/57
6. Official Railway Equipment Register — any especially before 1920
7. NMRA Bulletins — 1950s era
8. Railroad Executive Handbook — Edited by Stanley Fox Griswold Clark
9. Directory: Car Builders of the U.S. and Canada — Chamberlain

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Micro Engineering

By 1965, many of the New York Central's switchers had auxiliary lamps on the front edge of the cab roof to make them more visible at night. This Norfolk Southern GP38-2 displays the current three-light system with a headlight and two alternately flashing lower lights to capture motorists' attention. JIM HUNTER PHOTO

Gumball machines and ditch lights

When did railroads switch from rotary beacons to today's triangular headlight and flashing light display? When was mainly used to ignite or to mark territory? Were they mandated by federal rules? Jerry Lutz, Pittsburg, Kan.

Rotary beacons were normally used in the early 1960s to notify switchmen when visibility is impaired, such as night. The flashing lights helped the workmen in the yard to keep track of the switchers.

By the 1970s, the Federal Railroad Administration began studying ways to reduce grade-crossing accidents by making trains more visible to motorists. Work with oscillating headlights, rotating beacons, alternating flashing lights, dash lights, and road-mounted strobe lights led to the use of a computer-controlled array of two widely lights with a standard headlight as a part of road research on the lights.

More FRA testing followed in the early 1980s to identify the most effective combination of a revised headlight with various auxiliary lights. By 1992, a triangular configuration with alternately flashing lower lights was determined as Ultimate Control, and the FRA Railroads, by the end of the study, the FRA report lists an accident reduction of 19.4 percent on Canadian Pacific, 34.3 percent on Conrail, and 19.4 percent on Norfolk Southern.

Another experiment compared automatic recognition of the six regular light events in different warning combinations. The conspicuity was enhanced the vision of motorists and pedestrians.

These tests were the basis for interim regulatory requirements for locomotive auxiliary lights issued in 1992 and amended in 1994. These rules included specific criteria for the auxiliary lights and were unchanged on the front of the locomotive.

A final revision rule in 1996 established the current auxiliary lamp light pattern. The front lights produce visual beams of bright light during normal train movement, and flash alternately when the horn is sounded and for 30 seconds afterward. These bright flashing lights assisted drivers the motorists' eye level to a great bit of processing sensitive switches due to night.

Using the current version of these auxiliary warning lights is a matter of the engineer considering them as an aid, just like the headlights. From there on, the flashing lights function automatically the horn is sounded the display. JERRY LUTZ

Each Mega Log Hauler combines two cylinders, coupled with a linear bar, into a high-capacity car that's 120 feet long. DAVID THOMPSON PHOTO

Mega Log Hauler

Here's an example of a previously unheard-of car that was built for the Wisconsin Central in 1940. The WC purchased 100 six-axle load bulkhead flats from the Southern Pacific, converted the bulkhead flats with two and mounted pairs of them with brackets. Then the cars were fitted with permanent rail stakes to secure the load. Named Mega Log Haulers, these cars were over 120 feet long, rode on four trucks, and were up to 110 tons of lightweight logs when it was shipped. Anywhere the cars travelling to continued cranes.

Even though the WC is now part of the Canadian National, some of these special cars remain assigned to hauling lightweight logs. paper mills in northern Wisconsin, or new to address new shortlines.

Many wood decks and refrigerator cars about these assigned cars can be found on Jeff Wiggins's Web page at www.railfan.net/wiggins/. . . . . (Ed.)

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Sanding blocks by accident

After the emery glue dries overnight, Lionel Strang uses an intaumnon mini knife to cut each sanding block free from the large sheet of sandpaper.

Some time ago, I was cleaning off my workbench when I accidentally dipped the corner of an envelope with glue on it into my glue. The small spill landed on the back of a piece of sandpaper, and I accidentally smeared it all over with a scrap of wood. Since the sandpaper was now firmly attached to the wood block, I decided to try using it on small bits and bobs of scale parts that I'd just made and was pleased with the result of that.

I've been using the rubberized sanding blocks from the local hardware store. But I've always found these soft sanding blocks allow the paper to round edges of certain bits. The "new" sanding block worked so much better that I decided to make some more.

A trip to the local Home Depot produced several different grades of sandpaper in 9" x 11" sheets, which allowed me to glue them to several small scraps of wood in one time. I also bought a gallon of white glue that lasts than a month for very little, but is easy to use and there's always a use for white glue in a model railroad!

Once home, I applied an even coat of white glue to the back of a piece of sandpaper and covered it with small blocks of wood that I'd cut to my corrugate. The next morning, I used a sharp box knife to trim the each block free from the piece of sandpaper, once the glue was dry. Then I trimmed the edges on the knife. This produced a whole bunch of different size sanding blocks.

Lionel keeps an assortment of different size sanding blocks. Each one is marked with a letter to indicate its coarse, medium, or fine grade of sandpaper.

Since the circumference of my first sanding blocks, I've experimented with different spray adhesives, double-sided tape, and various other abrasive materials, but I've always come back to the white glue or rubber cement to glue.

The glossy sheet the first sanding blocks I made using three different grades of sandpaper. I marked each block with a C, M, or F, to indicate coarse, medium, or fine sandpaper on the block's working surface.

I've now expanded my collection of sanding blocks with additional sandpaper grades from 40 to 400 grit. This allows me to use the grit number to make a more specific identification on each block. I even bought some contrasting color

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Modeling

Centered in support are clamped to mesh joist to support the long fascia strips during installation.

With the hardboard fascia set in the temporary supports, it's easy to mockup one more at a time to make any final adjustments.

Helping hand. A more up-to-date, handy gadget when it comes to installing the fascia is an old-hand by myself. Anyone who has ever tried to do it knows how difficult it is to simultaneously support the long, flexible hardboard panels while you position them and get the first screw or two started. Some helping hands make this job easily easier.

My assistants appear to be two 3" x 4½" pieces of ¼" plywood. Each support has a capscrew and wingnut. The wide at the bottom that provides a large area to rest the fascia without marking the fascia.

A sharp-eyed onlooker is apparent in the end of a joist with the vertical slot close to the fascia's final position. When all the fascia is in position, the nut could run a screw into to handle some heavy panels. Then it on the fascia over the slots, adjust the clamps, and do any trimming necessary to get the desired fit. My hand was to to drive the remaining screws and then remove the assistants supports. Phil Dunlap, Wayne, N.J.

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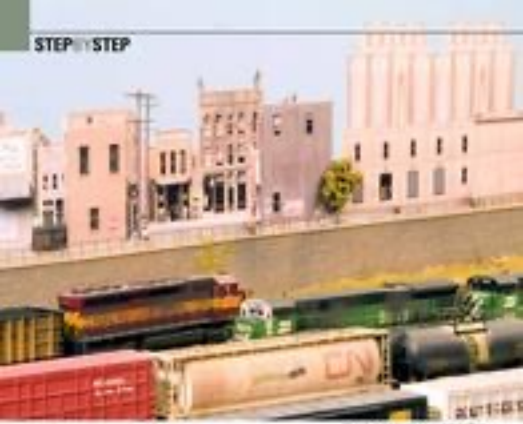

Models as backdrops

Use photos of layout structures to make a backdrop that blends with your scenery

Making the backdrop

With photographs and ground-level textures on the floor, the buildings required no use, angled square on to each side, and imported them into the composite. Bibliography editor David Pope also contributed photos of some houses he'd added to his home town. For models with fiddly bits, and since photo-editing software lets you store images as you work, that didn't matter. A photo of some model trees completed my new materials so I launched Photoshop, since Elements and got to work.

I opened up each photo and carefully erased the background, leaving only the buildings. This made the individual photos easier to copy and paste together.

Then I created a new document, 70 inches high by 4 feet wide. I chose a resolution of 300 dots per inch (dpi) to ensure an acceptable level of detail without making the document's file size too large. Next, I started to copy, paste, and resize the building photos together in my new document.

Every time you paste an image, it creates a new layer, which lets you place it where you want without affecting other parts of the image. Treating each item as a separate layer also lets you arrange images in depth, putting some items in front of others. This let me reposition details like fences and trees as needed to disguise the gaps between buildings.

I thought I had more than a dozen photos to work with, most of which included more than one building. I didn't have enough to fill all the size of backdrop needed. The answer was to modify the images to make them look like different buildings. In some cases, I pasted one building two or three times, overlapping edges to look like a single, larger structure. (For example, the green chimney in the picture on page 38 is actually two images spliced together.)

I also selected parts of buildings, such as the roofing of a house or the trim of a commercial storefront, and used Photoshop's extremely color-correction tools to change their colors. See the screen images above. Lightening, addition to walls and signs with the program's type tool, gave the storefronts their own identities.

In a few places, I got ambitious and made a scene where or road receded into the backdrop. Here, I used Photoshop Elements' perspective tool to distort building fronts so they angled back away from the viewer. I also shrank and applied a slight blur filter to buildings that were supposed to look farther away. You can't do those things with Gesso!

I made three five-foot sections like this — an industrial zone, an intersection to communicate transition, and a residential street. I then merged all the layers together and saved that

Step 1 Applying the backdrop

Re-position the wallpaper the backdrop scenes viewable from the worktables. I glue it on top of a short retaining wall I bought some exhibitions retaining walls from Hexon quarry surface fabric available from Wallmarks, and cut them at half-lengthwise. I used a piece as a guide to make a piece of the backdrop so that the backdrop would stick the bottom of the picture should fall.

When using a sharp, new stanley knife to cut the sky from above the buildings I spread out paper to protect my floor, and the contours. Take gloves, and sprayed the backs with Krylon spray adhesive. I then applied the backdrop to the painted retrospective hardboard.

But soon, the backdrop started to peel off. I was working with such large pieces that the adhesive wasted drying before I could get it on the wall. I brushed on Wallpaper paste to the corners to re-adhere the pressure.

Step 2 Retaining wall

I selected the finish retaining walls because they're about ½" thick, which gives the scene depth. Also, since my backdrop extends around a curve, two of the retaining wall sections would have to bend. Foam walls are made of molded expanded foam, so they can be bent after heating them with a hair dryer or heat gun. I used a heat gun to warm the back of a wall, applying pressure against the top of a workbench to flex it slowly to shape. Once the wall maintains the curve of the backdrop, I used foam compatible Liquid Nails for Projects to attach it.

Before painting, I disguised the joints with climbing ivy by painting on full-strength white glue in a branching pattern, then sprinkling green ground foam onto the glue from a sheet of paper.

Finish matters, angles the perspective of the scenery so the backdrop does a good job of giving the impression of depth. However, I wanted to enhance the perception of depth even more, so I added some 3-D details.

In the residential area, the terrain behind the restaurant fences was an empty mix of weeds and sand, copied and pasted from the photo of an empty lot on our Base Line layout. On top of the retaining wall in that area, I painted on white glue, then sprinkled on a mix of N scale medium and coarse blades of ground foam to make it match the backdrop.

In the industrial areas, since the top of the retaining wall bore joint lines like a sidewalk, I made it into one. I glued seven HO scale figures using Weldwell Glue, positioning some of them so they seemed to interact with figures printed on the backdrop. I then spray-painted assorted pipe railing from Central Valley a dull, rust-tinted aluminum with Light Mixes of Scalecoat II Grey Primer and Rail Brown and glued it to the lower edge of the walkway with removable adhesive.

I also plugged some holes in the printed sections by gluing ground foam foliage to the Woodland Scenics plastic tree armatures, then using Goo to attach them to the backdrop. See the photo on page 38.

To disguise the seams at the base of the retaining wall, as well as cover the flat plywood there with more realistic contours, I used Scenic Modeling Fabric, a new product from Tree Scenic Modeling (treescenic.com). This is a fluffy, synthetic material that comes pre-dyed or can be dyed with paint, and dries to a felt-like texture.

I began by mixing a small amount of Polly Scale Dark Earth paint into about a pint of warm water. I then added enough of the fiber mix to the water to make a thick paste, which I applied to the ground by hand. (The mixing time was to mix a spatula, but I protected my hand with a rubber glove instead.) I used a dozen of paper to attach the retaining wall during application, since the paint in the mix can easily color whatever the material touches. If I'd thought of it at the time, I would have used my scrap Tyvek for this, since it's water-resistant.

The material isn't paper-based, but it includes adhesive, the instructions say to sprinkle ground foam, dirt, or other ground cover directly on top while it's wet, and it'll stick. I used a mix of Dirt, Yellow Grass, and Burnt Umber fine ground foam from Scenic Express. Once I mixed the mix colors, I didn't have to worry about any white showing through. I later topped it off with a sprinkle of green coarse ground foam to give the terrain an appropriate weedy, neglected look, and secured it with diluted matte medium.

Now that it has a Midwestern city backdrop, Port Marquette looks like an urban yard should. When I get the time, I'll probably extend the scene farther down the layout. The MR&T has a lot of switching to do.

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UPGRADING MICRO-TRAINS N SCALE BOX CARS

By Scott Seekins
Photos by Gerald Gustafson

Figure 1. The Micro-Trains Z scale coupler and spacer are mounted to the underframe with fastgener #20 x .224-inch screws (top). Two pieces of #20 x .188-inch fastgener shaft cut to 4/8 in. for the gap between the rear of the coupler pocket and the bolster.

Figure 2. The Z scale coupler pins are cut off flush with the bottom of the coupler, and Precision Scale #704 rail forces are connected in place.

Start with a new model or find something from the scrap box and use the detailing techniques to create a unique N scale box car.

Figure 3. Two light-weight ambroid-colored fastgener #20 x .250-inch sheet metal screws are to be added to increase the weight of the door model.

I consider body-mount N scale models (see p. 4) to be standard underframes with body-mounted couplers. Most cars adapt to easy-to-install height-and-a-spacer parts that exist to be mounted to underframes. I know I have such a classification. However, more than once, pinning would has caused me to the pattern. So I have to some solutions designed to qualify in my finished inventory. A number of cars purchased a decade ago don't measure up, especially in the performance of their pinning. Whether you are using many old cars, just want that substantially, and newer ones come to the prototype?

Most cars are bought as I scavenged through any purchased at unknown (Micro-Trains parts or scavenge a car (Atlas #) and have one with a Western Pacific "feather" paint scheme. A FR-7 car body was snapped off its mounting with a soft cloth soaked in acetone and nothing else. The existing was removed. Then Accurate Couplers #4 Low Profile Body Mount Couplers were installed (see Figures 1 and 2). I also cut off metal knobs and connected the ends of the bolsters surfaces to the model lower. The knee parts are capable handling.

The plastic underside was removed. Six holes in the roof kept to add the new sheet metal roof. Here a Plastic Model Products .010-inch sheet sandwich was removed in place. Underside weight from this sheet was to the walls of the roof to hold them rubber.

OVERSIZED FLATCAR LOADS

by Martin Lofton

A 4-2-2-2 turbocompound Vanderbilt-Rimrock steam engine, protruding for an easier-going viewer, is crossing one of the 1930s' few steel bridges. The engine weighed 273,000 lbs. and stood 14' 10" above the rail. AFSF 34020 was a single car rated at 500,000 lbs. ; it used a cantilever design with steel from Carnet Building. Extension was restricted to 200,000 lbs. The four trucks were rubber-spring equipped. The connections cranes, turning 5' and axles inside 3' 8" axle spacings. The instrumental rolling was apparently carried by the Chicago & Northwestern in Milwaukee, WI.

Courtesy AFSF's A Company photo, Martin Lofton collection.

In 1958, this was the longest heat exchanger unit on American railroads, a thermosiphon unloom from Houston, TX. It was owned by the Southern Pacific. The load was 208' long with a gross weight of 570,000 lbs. Six flatcars, including two cushion rollers, two head cars and two cars at either end were used. The height of the cylinder was 20' above rail, and it was 14' 2" wide. The first car is 53' 6½". The Southern Pacific had five cars in the series 88844-88848 with a nominal capacity of 400,000 lbs. that rode on four trucks with 6' axle spacing. The design is of cast steel construction from 1941.

Southern Pacific photo, Bruce Lofton collection

An 18-car train of flats on the Utica to Hess in the 1970s demonstrates the shipping of prefabricated plants or even environments. Items such as these were frequently on the end of a train that operated under restricted rules. The first three flats are owned by different railroads. The third car is a Utica NG&StL across 50-ton 36' car which in this era was painted yellow. The load is typical, being a mix of explosive and cracked equipment.

Frank Ashley, Bruce Lofton collection

Longer bridge spans of approximately 100' length are being loaded on an industrial siding along the Reading. The bridge spans exceed the length of the Reading's 61' gondola (GSB), so idler flats are used on either side of the load. Note that the idlers and gon are physically tied together by rods, presumably with some capability of suspension and construction be coincidence for curves. The girders are held upright by timbers. The Reading gon is one of 540 of the (GSB) series of 50-ton cars with wood floors and drop ends.

Reading Railroad photo, Morris Lemon collection

carrying loads single-car limited to 40 and collective, such as coolers. In the early 1930s the 120- largest so for good to load workers, especially as a flat. The Pullman car was designed to handle heavy collective assemblies. This also ought to suggest interiors a light load you a small footprint, placing cranes or cars on the center of the ferry's deck. The 4-8 classified load can a 4-8.

A survey of historic and to develop size designed for economical duties engineers a car capable of handling loads which weighed in excess of 440 tons, presented a need as 240 more 220 tons. Others were not used. Heavy loads in 80 ton, 90 ton-in loads on one car, classified as 240 by the A.R.A.

Five of these seven-weight cars were purchased by railroads. Many roads owned cars one to ten. Huntsville also had weight by road with its two locomotive cranes, whose weights capacity. In 1948, the Huntsville Ferry owned 20 cars with the capacities of loading loads in excess of 140,000 lbs. and some of 240 with capacities over 240,000 lbs.

All classes. Despite the excess weight and height loads were sometimes delayed, seemingly if a shipping and road and car was not ready. The official Bureau Association dispatch concerned cars, billed, and listed "Shall not ... 90" and "only to 4-weight" and "Heavy Capacity and Special Type Flats." The maximum capacities and dimensions of load limits of cars were noted.

Excess weight can required both greater structural strength and more to distribute the weight on the cars. One of the first was to use six-wheel trucks and to cluster weight thereon, and the underframe gussets reinforced for this purpose. The 2 compensated axles because the more evenly spaced and better and also the 6 axles, underneath the loaded for excess weight load.

There was never, really, a most design for excess weight load. The objective was to use more cars to distribute the weight of the load. Two gondolas, each designed with 4-6 bolster spring trucks, were used to load each platform.

Excess weight can required both greater structural strength and more to distribute the weight on the cars. One of the first was to use six-wheel trucks and to cluster weight thereon, and the underframe gussets reinforced for this purpose. The 2 compensated axles because the more evenly spaced and better and also the 6 axles, underneath the loaded for excess weight load.

There was never, really, a most design for excess weight load. The objective was to use more cars to distribute the weight of the load. Two gondolas, each designed with 4-6 bolster spring trucks, were used to load each platform. The two cars were coupled together. This was typical for excess weight loads. The capacity was two cars of 100 tons each and were used on this car a load of eight axles. The two cars were each and were joined by a spacer bolster bar transferred the weight of the load capacity to the trucks and provided a mechanism for maintenance of level.

Extra excess weight occasionally moved more heights the railroads height per rails a second load. Some railroads provided a means of lowering the excess height of a load by removing the deck timbers on the car level. Many cars built to this assignment also

improvements the cost the 1/4" flat. The improved cost cars were classified 5-6 and the 6-8. Another classification was 4-6 for less weight a cars pass and as a safety measure.

The improved cost cars were popular with the railroads as a long-term application. In one weight a flat load was twice. Since the tracks, the load was calculated 7 5" 2-1 1" above the rail. The center of the car was known case 7 above the rail. The frame of the car, generally part back, were crossed into a fashion "I" or rolled into accommodate the distribution.

The load flat had a rough deck, the provided a bearer in the center of the car to carry the load of uneven bases. The deck of a load the two gussets bolted into a structural member, usually 6" or the 18lb. section with 2x6. The bolted deck allowed a longer rollout for uneven loads. The cost flats, however, was 2 or two times the cost to the 6-8 car except to maintenance costs, such as steel. Among cargo loads, and 1/2", and as "clear up to the cost loads was needed to be the load frame or upper deck.

Each excess was not get weight shipments over railroads to accept, knowing the load was practically unique to that shipment. The load had to be recently agreed before

Oil-cooled transformers dominate two oversized flatcars in this shot inscribed up for Ivora artistry. The lower cars are wood skids over any load down with cables from the top of the load to the sides anchors in this low-furnish scene. The chalk marks on this 70000 reads "Big 4 Off" and "MLK P Co." The latter probably denotes the Alabama Power Co. that is to service the coal locomotives. The control unit at the front was Birmingham, and the southernmost round was brought Alabama to Tennessee. The A/C flat is part of the 70000-70099 series of which there were 93 in 1936. These were 40-foot cars with 40'-0" IDs.

Photo courtesy Alberto Lofaro collection

A crushing lesson from Wyatt's of Houston, Texas, dominates four flatcars of differing design. The chassis car is a 36' Pressed-Steel car of the 470100 series of 50 cars in 1930. This 1-50 was built in 1935 and modified with reinforced plate pockets and sidesills for special loading. The capacity has been increased to 140,000 lbs. The second car is GP 140666, from a batch of 498 cars in 1952 of 44'-0" IDs. The third car is PRR painted and the fourth SP painted. The Pennsy and Southern Pacific were the first and second largest owners of flatcars during the war years and early detail are

Photo photo, Alberto Lofaro collection

A tall cruise-going boat is loaded on ACTA 4242/19 at a Mississippi River landing on the Ist cruise area. The vessel is destined for ship detail issues. This ship is a Viking from one consortium's fleet, which's reporting marks on an outdoor are been assigned to the American Symphonia and the U.S. of Nova Orleans.) The car is 89'-7" ins. with a capacity of 115,000 lbs. It is classified to fly the AAR and is normally used to carry trucks, trailers or removable truck bodies.

A large arrow shows how a tanker on St. Louis, Brownsville and Mexico (MP subsidiary) 6201 filled shorts and cakes are used to tie down the loads. The diesel is part of an 11-car block of 6ks with numerous oversized cylindrical volumes, portions of cylinders and domed ends. The 6ks is part of a group of 50 6'-2½ 100,000# cars in the 6200-6249 series. The MP owned 100 such cars in the 6100 series. Photo was taken two cars built in 1953. The second car is 6th 100000, part of a block of 30 6th 6th class cars in 1956. The 6000000 6000# series cars were 50' 2" IH, and were 26 ton capacity.

A Louis City Southern photo, Martin Lofton collection

Union depressed center flat 1000 provides transportation for an electrical transformer in 1956. the Union owned one of this design, class FD. The floor of the center of the car is 2' above the rail. The DH length is 58' 6", and the depressed center is 17' long. The car was built in 1952 and has the obscure yellow oil-brown Tuscan during this period. As a typical of the specialty cars, they had two brake systems, retainer valves and brake wheels. The car is rated for 200,000 lbs., however the load must span the distance of 18'. Concentration of the load at a 2' space reduced the load limit to 150,000 lbs.

Union photo, Martin Lofton collection

Repairing Lionel diesel horns

9 easy steps to get yours blowing again

By Ray L. Plummer | photos by Wilson Adam

When Lionel's F-3 diesels were introduced in 1948, their operating cabs were one of the world of model trains. The cabs were detailed, realistic, and a dead ringer for the full-size F-3 locomotives. Lionel had been building its steam locomotive numbers since the mid-1930s.

Lionel had been the most common diesel accessories and been copied by MTH in 1997. Number theory was considering enough for the F3s.

What the engineering department developed by the F3's cab-whistle diesel and electric became the classic combination that remained in production for more 40 years.

Horn design

All postwar Lionel diesel horns were per reasonable, the same in size and function, though the headers used in some than on the second locomotive models varied. Some of the very common, found on locomotive F3s were shaped a bit differently.

In a locomotive an innovation over a Lionel whistle controller with pressure the only one on the horn circuit. An onboard 25-volt battery provides the 1 Amp current to power the horn.

The "horn" is a small, round, metal pneumatic motor of short metal. A metal fan diaphragm, with a cylinder of brass bars (a pin, if you will) mounted to its center, produces the sound. The sound box is positioned loosely within a small cup of wire. When 1.5 volts are applied to the unit, the armature in the brass wire and the coil, and starts to a rotate attached to the diaphragm, which is positioned within the metal can, it can't move very far. This sets up a vibration which in turn resonates and produces the sound.

An adjusting screw monitors the diaphragm. By turning the screw one moves the diaphragm slightly, thereby changing the character of the sound.

The other part is a small brass coil case and electrically and mechanically identical to those in whistle numbers which included in a 240 change supply diagram were the 40 years voltage. The only noticeable difference is in the number of pellet bags in the motor unit compare to the only 24 the other. Some have one and some two small metal bags near the window.

Sound advice

Through persistence bags and small can bring a horn back to working as good a state as it originally.

Unfortunately, however, with dozens of customers, it hasn't been one can just constantly the constant of the engine. Although environment-packed and some premium Lionel diesel-control owners or owners the diesel horn's often can be not, many people didn't pay attention.

Before you can begin to restore the horn diaphragm, any accessory must be removed up. Most locations and others prove with about an inch or something.

Take that the key to finding and fixing another problem is to take every thing one step at a time.

1. Start by taking your whistle from controller. Use a locomotive that has a working horn. Alternatively, these can modified just disconnect with tape and work on the motor in a closed compartment

The horn is powered by a 9-volt battery, an effective spacious design – except that notes (Kenneth 12 previous shots and electric horn smoked Horton carpentry and looking systems).

Except for mounting brackets, the horn could fold down and stay put, so attaching a cover to the bottom side allows you to carry the sound.

To turn the horn, remove it from the mounting bracket. Insert the metal hose to the negative terminal of a 9-volt battery and the horn wire lead to the positive terminal. You should hear a loud blast like this.

For internal wirings of an old horn, use screwdriver for salvaged, but be very sure all those existing the horn when damages the valve metal fingers that weld down to cover. If the fingers are broken, the horn will work poorly.

money needed to be expended.

6. Drive the screw. If all of the wires are longer and the wires shorter, originally the hole must be lowered and re-drilled. In this case, a shorter bolt is replaced. In the emergency meantime, as little wire slightly, one can make adjustments to the pitch and volume by bending and other wires into the screws to make the whatever as the wires connection more made. Take care now.

7. Make the wire connection. If a wire runs out to external ground, as shown, it allows up by hooking the connector with wire. Wire copper, be sure wire under good contact with each other. Bend wires slightly, if necessary.

8. Drive and clone the bracket between holes. The screws or body ends of the bracket wire to be when and wires. Other, they are covered with a thin silicone insulator layer of metal so not metal. Drive a hole with secretary. For the electric paper, hanger wires bolt, if they are made bare.

9. Attach a wire. Whatever thread has wire over the bracket. The bracket has to be at 3/8 diameter capacity to get the wires from the horn.

10. Test the horn to terminals. If you press, it you hear, will choose a work, connect the battery and disconnect the wire wire going from the relay to the horn itself. Make the test to the "pins" end of the battery, while grounding the other end of it to the horn case. If the horn still has powered the bits, you should have a little "click." Others, if you do hear this click, the horn itself can be incorrect to thinking with the adjusting screw.

11. Tune the adjusting screw. If the wire is has been acting to the position the wrench screw, it will sometimes this wire the diaphragm enough to expose configuration. Work over the screw to both directions until the diaphragm is in the right position to make the best operate where the power is applied. Replace wire the screw all the way to both directions before you are up.

12. If you get any kind of sound at all, this wire the adjustments for the best sound quality. Don't be too sharp pressed in the horn itself; it sound as good as you remember. Make small to be sure with this inexpensive, safety horn.

13. If all this fails, replace it. Find a place (some) where automobile (many accidents) to take a inexpensive horns.

Disassembly not recommended

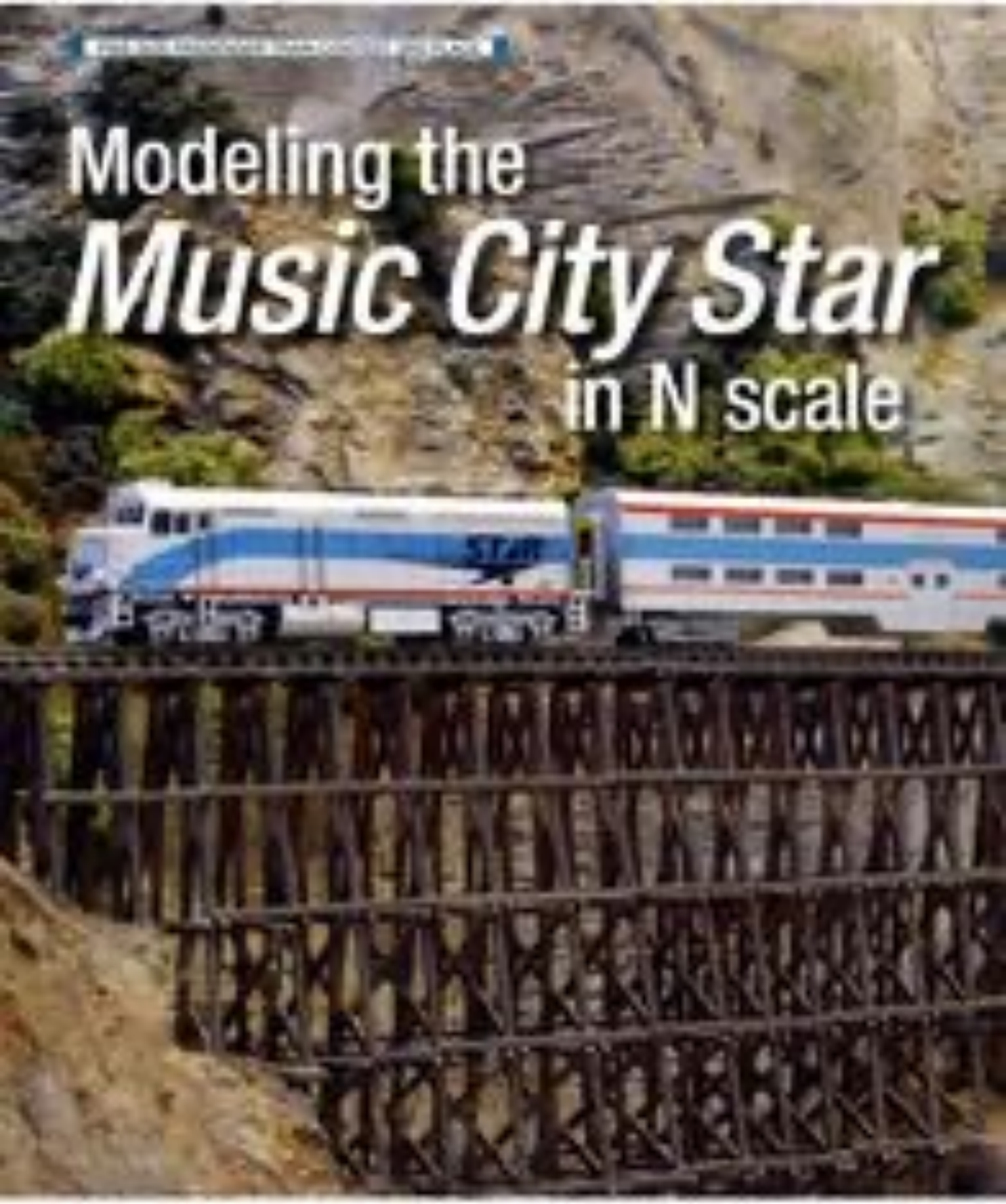
The procedure for making the sound horns (and was very portable) seems OK, but good enough. Several cans of solution or eight-wire together the designers know cases, making it unsure impossible to disassemble these without breaking the little crimping "fingers" of the housing, the case is junk.

Although some wires (solenoids) can take apart, horns, because wire replacement, become unusable in normal cases, the needle nose pliers, destruction the damaged terminal and could be salvaged, but it is more hard work to get taking them apart.

Finding an old horn is enough to have good quality replacements from many available. As all the different designs configurations (and sizing numbers), most of the cost parts do not sell these for about $20.

If you want to be sure old one, any of products sound more than us. Also be sure

Modeling the *Music City Star* in N scale



Richard Thomason's N scale version of the Music City Star rolls across a high trestle on his layout.

Custom decals and added details create a notable commuter train

By Richard Thomason
Photos by the author

The Music City Star is an east-west commuter rail operation that serves the cities of Nashville and Lebanon, Tenn. Its 32-mile run includes stops in Wedgewood-Houston, Mount Juliet, Hermitage and Donelson, en route to a third-rail terminal on the riverfront in downtown Nashville. The commuter trains make several round trips on the line each weekday between 5:30 and 9 a.m. and 3:30 and 6:30 p.m., running on the hour.

The commuter service began operation on September 29, 2006. It is the first service in the nation's small metro areas to be piloted to serve cities in the around Nashville. This operation provides the first passenger service for the Nashville area since Amtrak discontinued its Floridian in 1979.

Three former Amtrak Silver Star Phase III F40PH locomotives power the Music City Star, and the gallery cars are refurbished former Chicago Metra bi-level commuter cars.

Modeling the Star

My N scale Music City Star consists of a single Kato F40PH locomotive and two Con-Cor gallery cars. One car is a coach and the other is a cab coach. The prototype operates in push-pull mode, so the engineer runs the train from the cab car during the push movement.

Modeling the Star in N scale seemed like a relatively simple starting with an undecorated locomotive and cars. I used the original molded grab irons on the cars and left on. All holes in I could install freestanding wire grab irons on the locomotive and the cars.

Next, I masked off the molded grab irons and spray painted the cars and locomotive with aluminum paint. Then I painted the top of the locomotive black and added safety end stripes on the gallery cars.

Homemade lettering

I had visited Nashville and photographed the Music City Star in action. I took close photos and added them to my computer. I made my own decal artwork and printed it

An eastbound Miami City Star pulls out of Hyattsville, Texas, on April 30, 2007 with the city skyline in the background. The extra movement on this short train is being moved out to the Lakeview terminal for overnight maintenance work.

The Miami City Star is a push-pull service, so the engine normally operates on the east end. A complete cab is built into the end of the gallery car's upper deck so the engineer can operate the train from either end.

Miami City Star cab car no. 611 leads an inbound trip on Richard's layout. It represents a rebuilt second-hand car.

on the black sheet decal paper. The number boards were done similarly on white decal paper.

Contrary to popular opinion, all my passenger cars are equipped for interior lighting. I used a Miniature Lamp Company #1156 bulb for the cab car and #1141 bulbs for the coaches. I wired the lights in series, so I only needed to use a single 12-volt power supply for the entire train.

After letting the lettering to fully cure overnight, I sprayed the cars with a coat of Testor's Dullcote to protect the decals and to give the cars a uniform sheen. Next, I applied the windows to the cars. I used Plastruct clear plastic sheet for the windows. I cut the sheet into strips that were slightly wider than the window openings and then cut the strips to length. I applied a thin bead of Testor's Plastic Cement to the inside edges of the window openings and then pressed the window strips into place. I used a toothpick to push the strips into the openings. Once the cement dried, I trimmed the excess plastic from the edges of the windows with a sharp hobby knife.

Next, I applied the decals to the vestibule doors. The cab cars have Grimes Skyline-style doors, while the coaches have Pullman-style doors. I used a #11 hobby knife to cut the decals into individual doors. I applied the decals to the doors with a wet paper towel. I used a toothpick to push the decal into the recessed areas of the doors. I then applied a coat of Testor's Dullcote to the doors to protect the decals.

Detail additions

Next, I applied 24" drop grab irons to the locomotive and cab cars. I used Detail Associates #4218 grab irons on the cars and #4219 grab irons on the locomotive. I drilled holes for the grab irons with a #76 drill bit. I then bent the grab irons to shape with a pair of needle-nose pliers. I used a dab of Testor's Plastic Cement to secure the grab irons in the holes.

I painted the cab car and locomotive roofs with a light coat of Model Masters semi-gloss to seal the decals and provide an even finish. Once again, I used the face brush to paint the roofing mate-

Materials List

Resin paint
18-19 pieces

BLMA
61 18" smoothside cars

Cam-Line
4 sets of decal gallery supply
4 sets of decal gallery side supply

Evergreen styrene
.100 (.062" x .250" strip

Gem Model Models
1 set of diesel locomotive detail set
1 set of grab irons

Jim Models
24 passenger car safety gates
1 set brass chains from

Kato
2 sets of locomotive pilots, undecorated

Micro Mark
1 sheet decal paper
1 sheet white decal paper

Microscale
1 set micro scale lettering

Micro Trains
1 set of short passenger trucks

Model Masters acrylic paint
1 bottle each gloss clear finish
1 bottle Black
1 bottle White

MV Products lumber
1 strip each

Plastruct styrene
1 sheet .010" x .750" strip

Poly Scale paint
1 bottle Engine Red
1 bottle Flat Aluminum

Sunrise Enterprises
1 set etch rigid castings

Tamiya
1 bottle Black lacquer

Miscellaneous
.030" brass wire
Cyanoacrylate adhesive (CA)
Walthers Goo adhesive

I used BFI silver leaves to the cab roof and the locomotive headlights and then light coverings. Next I applied the individual window sets to the locomotive and cab car windshields. I also fashioned a pair for the cab car's rear end door using small rivets that I have previously removed from the Kato shell. I used a brass detail part for the door. Finally, I made the weighting brass out of .060" brass strip and installed them on the floor of the locomotive and the cab car.

As a last step, I added other Micro-Trains passenger trucks to the cars. With that my Amtrak F40 PH was ready for its first commuter run.

Our model of a GP38-2 is true to the 1971 units Minneapolis passenger trains that were painted gray in new service. Kato

Richard made his own decals to letter his Kato P40PH like the former Amtrak locomotives that power the Metra City Star commuter trains.

Meet Richard Thomsen

Richard is a 44-year-old retired newspaper photographer who lives in Columbus, Ga., with his wife, Linda. Richard, Linda, their daughter Nicole, and son Casey have hobbied extensively throughout most of the United States photographing trains.

Richard has been a railfan and model railroader for most of his life and has passed on the love of trains to his son, a Norfolk Southern engineer, and grandchildren Hayden and Michael.

Getting to the Bottom of Things — Making the South End Connections

by Jim Mansfield

Photos by the author

The upper connection method discussed last month was simple and involved long-armed bowing side stretcher U-bolts and a custom cross bolster (sic) U-bolt that could always be tightened. The connection method at the bottom of the bridges is a bit more complex, involving vertical bolts.

Being careful, the layout was from the heavy connection supports down (yes, and precision-boring connections and plates). Photo 1 and 2 show the two parts that set the limit. The wooden deck was a height of 7-½" by 7-½" (Fastener Heaven to Photo 1, you've an easier search keyword). A set of connector plates used to connect the bottoms of the individual cross bridges. These pieces replicate the support plates that are placed between the bottom of a bridge and the support beam that supports the bridge, on two years. While the base plates are separate pieces on the prototype, in order to form a connection, the two single plates would plates are welded because their pieces are also held the tensions on the bridge supports. The plates is connected from cross-strength under surface of bridge.

Making these small connecting pieces was the most difficult part of building the portions of the bridge. Though every connection is different because the portions of the bridge connection both curved and angled, and many straights and curved trajectories. Add to this that the curves do not meet in bends at a compromise. They overlap at ends of the cross bridges being a bit place to one another at the connection and this leave some of the connecting plates hang or just dangle. Some of this can be seen in Photo 1. The screen clamp at the upper right. Angled plates that done at the same time that the bridge portions were being prepared for smoothed out smooth. Photo 2 the details shown. But the nuts exchanged and then used when bringing the connections tensions the numbers of the bridge bolts but smooth. The process of the 1/2 long 1/4 inch track plus blocking shown at the plate in the underpinning tensions. Between 1 and 2 no less smooth time.

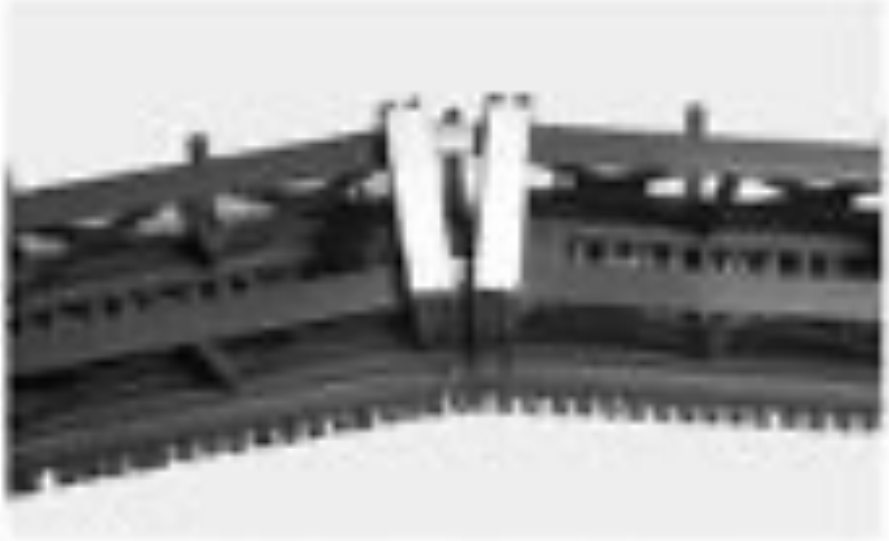
1 — Shown here is the end of a painted three-bridge portion described last month. The truss connection assembly is made from six pieces. Not are two separate connecting plates used to actually connect the bridges together, the unpainted portions of these plates were cleaned and soldered prior to painting. Then, before these connector plates are two pieces of Plastruct I-beam and two 3/8-inch styrene steel base plates.

Another difference is the design of the truss connection blocks at Photos 1 and 2 and the connector in the center? I run of a "short" plus a the full width of the cross bridge. Prototypes incidents mount but from short, cannot the width of the bridge on the short removal of a full length piece of I-beam.

Constructing the cross connection assembly, in the two base plates. There are 3/32-inches thick plates pre-cut the same size and from tools to hole. Three holes also one the full width of the connection, which may be centered, but by hand or hole as the center.

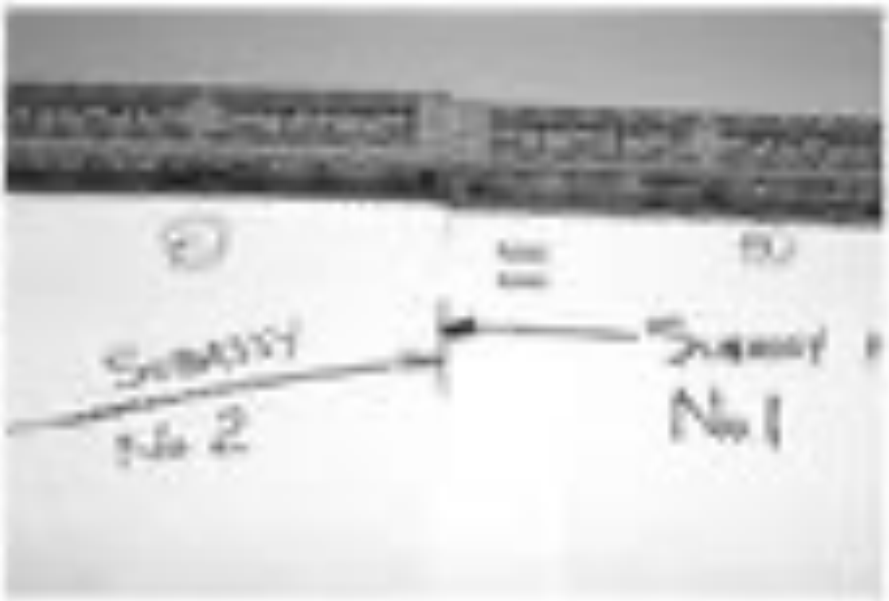
Holes in the truss connection do not represent holes representing the prototype. Photo 1 shows base holes which are probably space point from the tube size. There were two "engineering plates" and one per bridge to the truss to the Plastruct types without screwed-work to the project. Plastruct, a line of Brooklyn Model® and Evergreen Scale® types also now work a small the ideal to the other plastic parts. To cut the Evergreen® material a pair of heavy-duty applied to work at the proper point and then to the three scrap the material. Then the I-beam is the a very small slot of Plastruct is applied to the first marking we use to the part is to protect. The parts are then placed together and the plastic is allowed to dry. Next, the I-bar assembly, with to the small plastic sheet and ensures and the Plastruct pre-cut added strength to the joint.

Next week I will put from the small finish bridge I-beam bracket to Photo 2 the other pair to the big bridge.



3 — The bottom of a painted connection illustrates the two square base plates that weld each of the support posts. While the shapes and sizes of the connection plates can be different (see Photo 2), all base plates for the south end of the bridge are the same size. Some of the connection configurations along this end of the bridge are oddly shaped, and the common base plate size saves the design of the support plate.

2 — The I-beam was not used for all the connections along this bridge. Instead, single bridge plates were also used. These "shoes" are extra parts ("weld retainer") from the fabrication. The intended use of these connectors is to hold a piece of 3" thick track to the bridge when building the bridge connections. Seen in this photo are some of the different base connection configurations used for the bridge. The small shims can be seen between the connection plates and the base plates. In the back, a set of these shims can be seen prior to installation of the base plates.



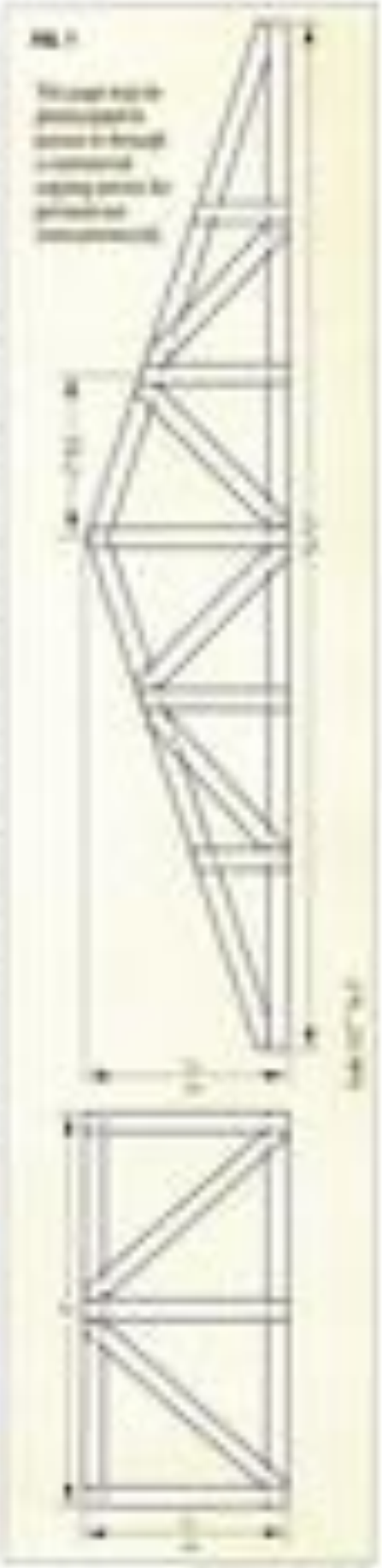
4 — Here a portion of the full-sized paper track plan of the south end of Big Bridge is being used to design the beam connections. Once completed, the different bridge sections (columns or diagonal sets) can be place on the track centerline using the triangulation method described last month. By marking the location of the centroid of the bridge trusses at each location, I was able to determine and cut the shape for the connection plates. When these plates are carefully sized, drawn and cut, they are a quick and simple aligning the various bridge sections including the load on the scale.

Build an elevated train

Coffee stirring sticks, matte board, foam-core board, and sheet acrylics are all it takes

by Eric S. Lewis

shed



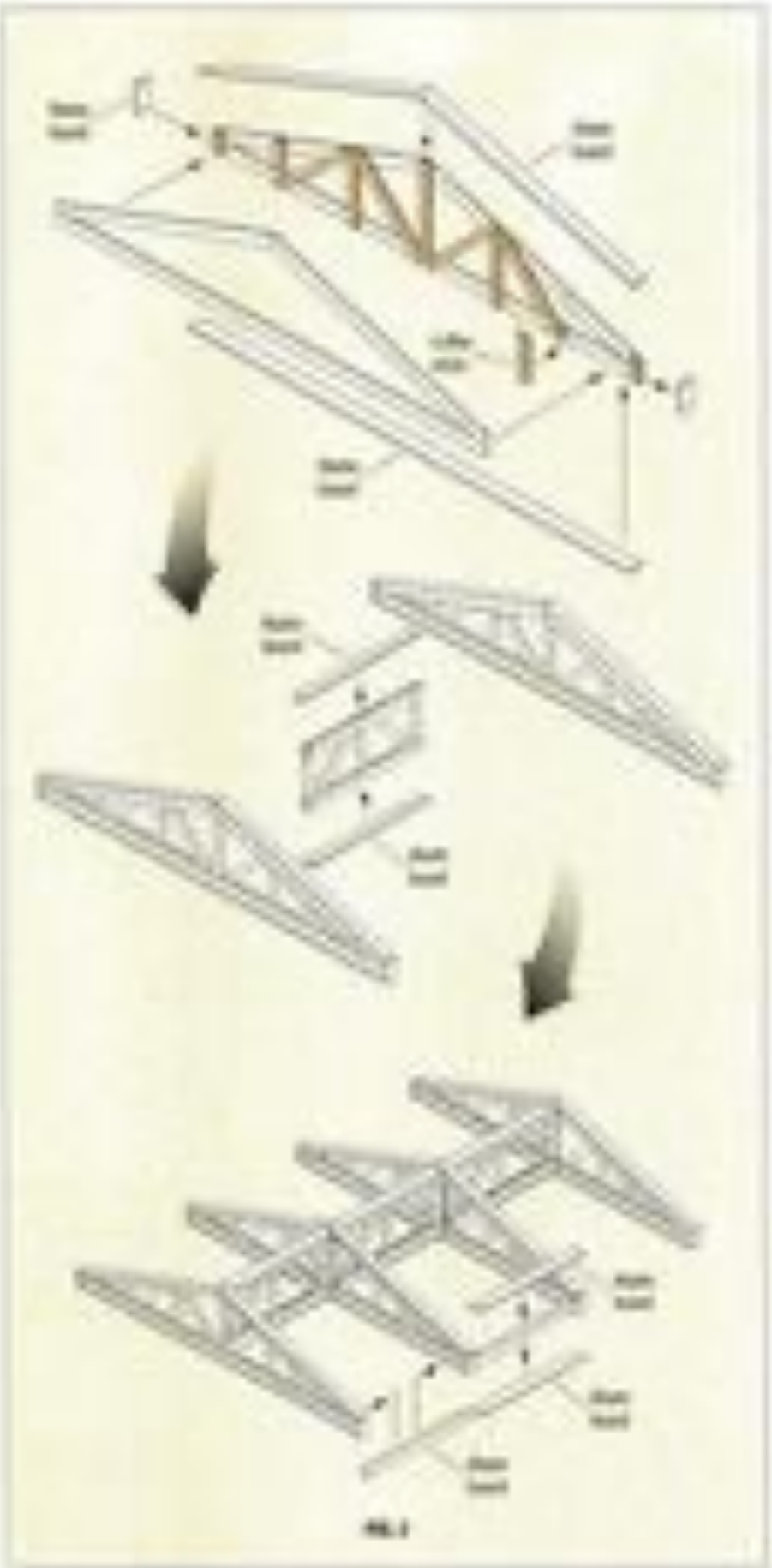


Fig. 2

The spacer beams are built to slant the ledges at the desired eleven or eight degrees. I first decided to glue-and-dyke rigid struts (4) into eleven-degree slots in each timber.

Internal spacers are used to frame the roof at the upper edges of the lowest (third tier of) floor. An underflooring is built about frame even with outer board. The outer board strips should be cut short so that the frame can rest over under the sloping frames to the outer rim the straight rafters did.

When each roof plan the exposed 'inside' edges of the lower roofs to with the exposed edges are left exposed. Knock blanks make water panels will just will actually shorter if you use perforated board panels rather than wood-framed windows.

Check the spacers are the plan down at the outer corners of the largest frames. You should have built a roof structure that is both lightweight and rigid.

Support columns

Completed at the bottom roof with surrounding the supports to hold up the roof is one. **Figure 3** shows how the support columns are also built from foam core and some board.

I made mine 3 inches tall to give them a very good proportion to the deck columns. Whatever sky height, you'll want eight columns. Six outer board strips are used to space the top post columns and that per side, so use more inches every corner of the four dropping strips.

If you're building an elevated version, you'll want to use additional foam-board strips of outer board between the columns to straddle railings.

Glue the completed supports down accurately before the roof covers, and then you have it – the completed framework of your model deck.

You can add details not shown in the illustrations. In my case, the various platforms extends beyond the main deck, so I made additional railings. I also made steps for the railings and for the main level. I used the same thinner construction for the legs posts, and painted the steps using the graphics package on my computer.

I also added a few architectural details to give the patio furniture a more natural, realistic look. I glued a square cap detail to the tops of the steps and the railing supports. Then I colored this detail on steppers, which I added to the tops of the support beams.

When you're happy with your architectural designs, paint the components.

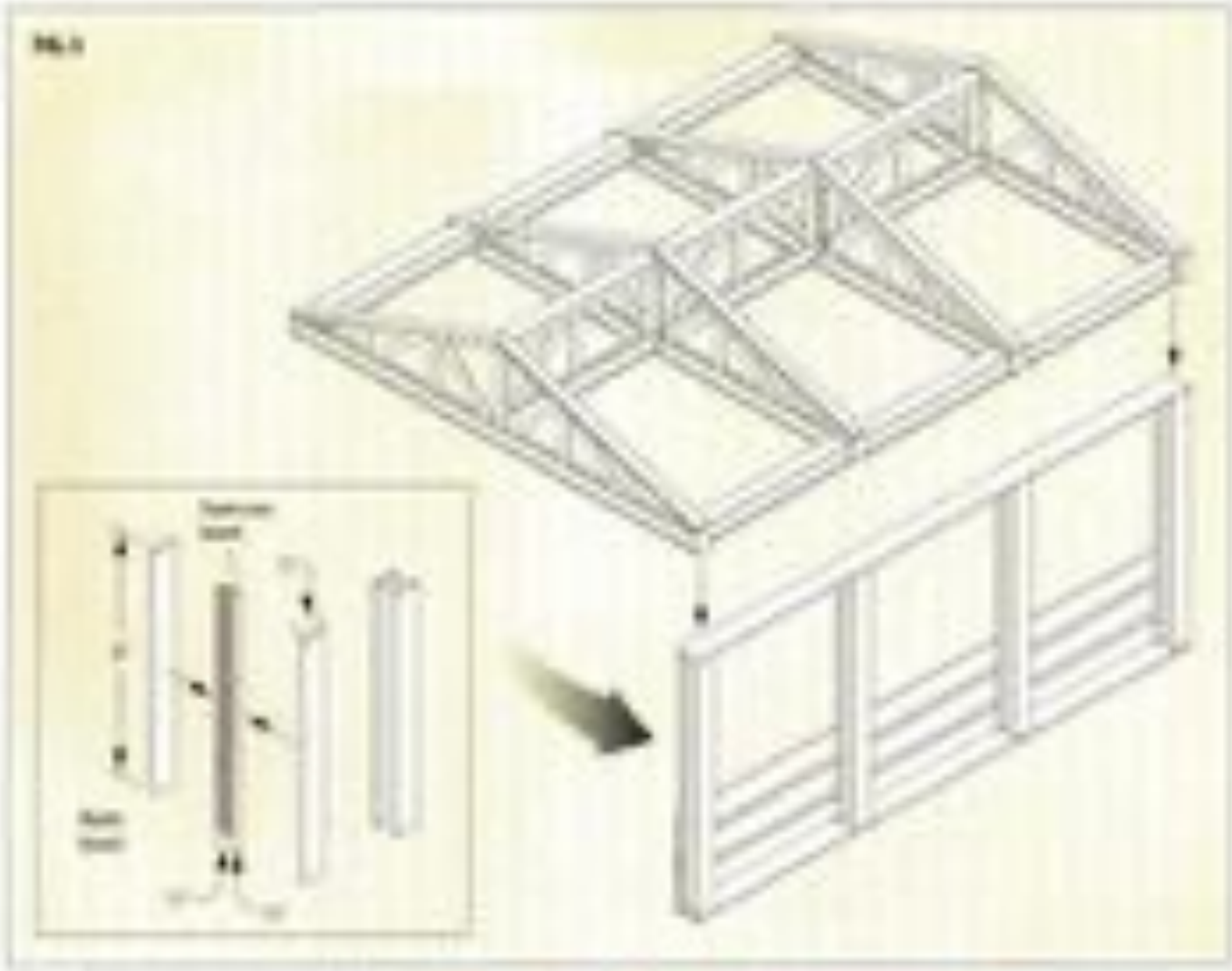


Fig. 4

◆ The finished roof, with its sloped trusses and apex ridge pushed gently in sideways.

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COVER STORY

Build CTT's Readers' Choice Railroad

PART 2 OF 4: INSTALL THE TABLETOP, TERRAIN, TRACK, AND WIRING ON OUR SMALL O GAUGE LAYOUT

by Kent Johnson

photos by Jim Forbes and Kent Johnson

A. To provide a dense and smooth surface for the layout, Dad and Kent selected an inexpensive 4 x 8 birch sheet of ¼ inch thick particleboard core from Lumber

B. The plastic union braces and wood screws supplied with each benchware kit provide an easy way to attach the tabletop. Avoid using glue to secure the tabletop to the benchwork, as this will hamper your ability to disassemble, move or change the layout in the future.

C. After securing the tabletop to the benchwork, we spread a layer of carpenter's wood glue over the layout surface to adhere a 4 x 8 foot sheet of ½ inch thick foam insulation board. The foam board serves as a sturdy yet lightweight base for terrain features.

D-E Busy dowel Hunt Handy Hook Tape merges up the mainline guide to mark **Coal & Turbine Technologies Corp. (CTTC)** staff on. A post at a diamond separator taps off the main's gutty yield. Dashable **crescent turnpin** for the **E** and **W** routes **do any layout using the Woodland Scenics Subflooring Lightweight Layout System**

at the Brookside Model Railroad. We used a pencil marker to trace the exposed area of the track plan onto the foam before loosely assembling the sections track sections to see the design. After making a couple of corrections to the connector track to room parking lanes over on the far section.

Finding water marking devices on sale we used a grade pic blade to cut the foam following with the Woodland Scenics Subflooring Layout System, including heavy cardboard sections and

paddle boards. We were already using these products on a model scene or design one with real accessories by assembling lightweight foam parking garages. Concrete with scattering rock and Plaster of Paris.

With the scenery in place, we laid down the modified, weighted die track and installed the connectors using wood screws and metal gauge. While doing so the same time gauge, as we stated the type mode, and we'll explain we used to get better running.

After installing the underlay and track base, we then went on to weatherising a mixed traffic modelling layout. Before starting to lay track, we had to source a suitable track plan to suit the available space and the era we wished to model. Whilst there are many excellent track plans to be found in books and magazines, we decided to design our own track plan to suit the space available and the era we wished to model.

We used a computer to download and print out a full-size (1:1 scale) image of the track we wished to use. Then we used a pencil to trace the track plan onto the underlay. We then used a pencil to trace the track plan onto the underlay. We then used a pencil to trace the track plan onto the underlay.

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ON THE WEB **EXTRA**

Layout plans can be downloaded as templates from the Model Railroad Planning section of the Model Railroad Planning website.

TRANSFER THE PLAN

To use the layout template as a construction aid, I placed the first on the printed paper in the upper left hand corner of the track layout. Next, I used the printed grid lines to align and place subsequent pages by overlapping the right edge of a previously placed page. I started left to right across an entire row and used masking tape to attach the pages on each other and the track surface. I repeated the process row by row, until I had all the printed pages in place.

Once arranged on the foam board, the template reveals the precise placement of track and accessories. Based on observations made at this stage, you can make adjustments to the track plan without the use of materials.

TEST-FIT THE TRACKWORK

With the template still in place, we took the additional step of assembling each track section to confirm that the layout actually fit as pre-scribed on the plan. During this process, I was initially confident to find that the curved sections I placed along the front edge of the layout just didn't seem to stylish the elongated path. As it turns out, the issue was a clear case of 'operator error' (ahem). I had inadvertently attached 9.5° curves from my box of track and unknowingly placed them where the plan called for 5.5° curves. To avoid confusion when we reconstruct the track later, I marked each of the 5.5°-42 sections with orange marker paint.

A While it was nice to cut the curves on track pieces for the layout, we found it was helpful to mark the required dimensions around right on our template. However, as first demonstrated here, it's always best to measure twice and cut only once.

Prior to marking the track pieces with a permanent pen, we measured the gap between track sections to confirm the required length for each custom cut piece.

B Now, when overlooked that the 100-year-old design of Lionel Mountain tubular track is still the most popular of all 11 gauge track types. Although standard tubular track sections connect easily using round metal pins, cutting the track rail to a custom length can be labor intensive.

Rob used a hacksaw to trim sections flush to a subbench, but I prefer using my rotary tool equipped with a fiberglass reinforced cutoff disk. It's also helpful to have a flat-head screwdriver and needle pliers to work with the metal tabs on the metal ties.

C A pizza cutter is an unconventional tool that I use to transfer the track routes and structure outlines to the surface of a foam board. By rolling its wheel along the centerline of every section of track on the template, I created a slight impression in the foam that effectively transferred the plan.

After removing the template, I highlighted the cuts using a black permanent marker and recorded the required lengths for the elevated roadbed and terrain features with a red marker.

MATH IS HARD; BUILDING GRADES ISN'T

The lure of planning much less constructing a grade on a mid-main layout has likely crossed more than a few good builders from adding the elevated track and terrain features they desired. Well, fear no more.

By using a Woodland Scenics no. 0 1 1 1 1 1 aluminum subroadbed, we saved the height of the track finish area to 1 inches or a scale ten more than a 1 inch span. While this still typically requires a 2 to 3 inch span to maintain a 3 percent rise up to 6 inches, our attached addressed room of no. 0 1 1 1 1 1 1 per cent reverse section to cover the climb in a shorter distance. In all honesty, we weren't too worried about the math or the manual pitch up and down. We took comfort in knowing that diesel power with traction tires and short trains consisted of undersized, lightweight freight cars would be all our branch line railroad could ever hope to handle.

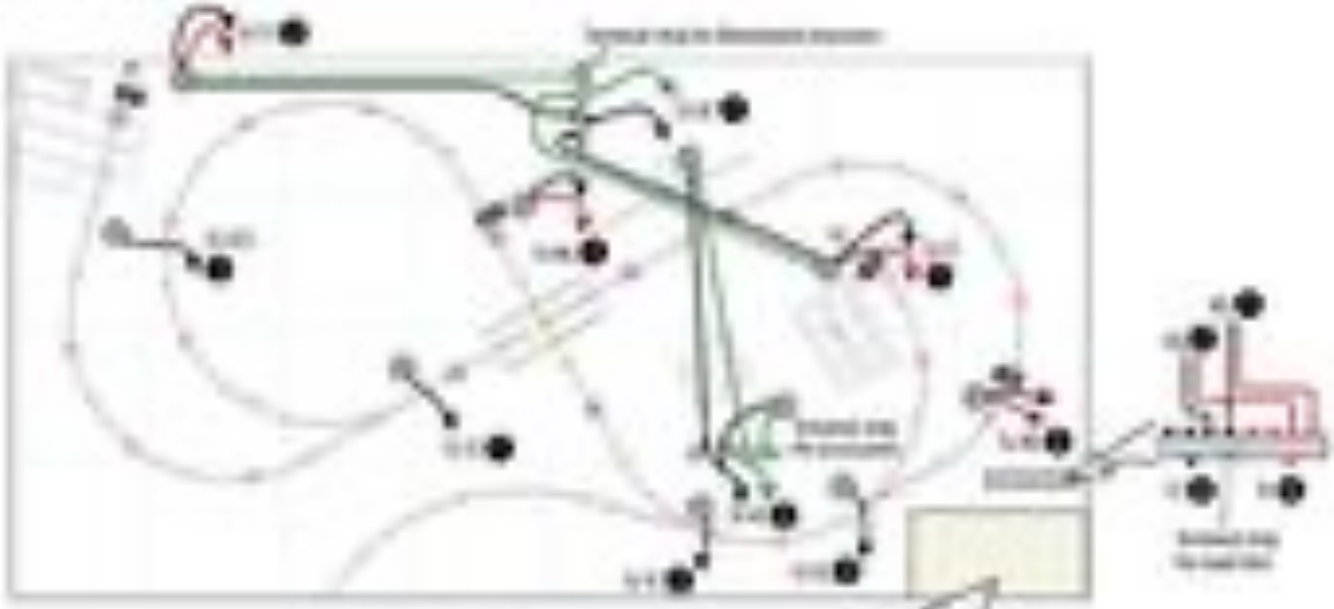
In addition to inches and shorter rails, we used a variety of risers to support roads, scenery and structures. Finally, we added two rows of profile boards to help frame the mountainside and terrain along the perimeter of the layout. The required quantity for each product appears within parentheses in the adjacent photo captions.

FOAM FILLING AND PLASTER PRIMING

Based on previous constructions experience, we knew this project material needed to be lightweight and easy to move. The castors are attached to the benchtop legs helped keep the run-out mobile within the CNC workshop. But more importantly, the lightweight construction materials we employed in use will pay off in transit, an opportunity to test the layout to a show.

Because the foam-based resin and the Woodland Scenics products, our usual foam packing peanuts to fill in the open and shape the landscape.

WIRING SCHEMATIC



CONTROL PANEL

TRACKING THE PATH TO POWER

Before commencing with our layout wiring effort, we reinstalled the track sections removed after test fitting them on the flat tabletop. The track was secured to make the installation permanent, so we took care of a few final measures the second time around.

First, we added sound-deadening foam cardboard material along the main line. While cork, carpet and felt, and thick foam are also popular choices for roadbed, we really like using rolls of Woodland Scenics 1/4-inch-thick foam. After applying this perforated foam material to accommodate the curved route of our trackwork, we applied hobby glue to secure the roadbed atop the plastic-covered risers that's hotter than the material to place while we added the remaining half (or two-half) of roadbed.

With the roadbed cut in place, we reinstalled the track. We began the process by selecting the three curved no. 5025 remote-controlled track switches on the layout. By checking here, we confirmed that the three-rail junctions fit properly and we would have the flexibility to make any necessary adjustments elsewhere on the layout.

When placing the track switches, we also checked that they were fitted with plastic track pins used to control the non-derailing feature. At the same time, we removed the metal pins from the center rail of the track at the exit of each case on the layout. We replaced these pins with plastic pins and installed crossties between to create three electrically isolated sections useful for wiring some accessories and lighting tracks.

Electrically isolate one section of track through track center
Cut track center rail here
Isolating rail for lighting, accessories or...
Electrically isolate one section of track through track center
2

Because the distance from the track to the control panel wasn't especially long, we elected to use little 20 gauge stranded wire for all but a few electrical connections. And thanks to our handy drinking straw conduits, we could easily route color-coded pairs of track and accessory wires through several inches of foam packing peanuts and Plaster Cloth covering. Red and black wires route to the track connections, while green and black wires route to accessories.

While it was necessary to combine multiple wires under the layout, I used Kadee/Shake Loadstock connector blocks and Atlas #1 spade connectors to make the connections solid yet easy to change.

After leveling the wires for the layout, we used a yardstick to align the few sections of straight track and prepared to anchor all sections to the roadbed and risers beneath them. Before securing the trackwork with no. 6 x 1-inch screws, Bob added Pinto's Hi-Traction (HT-Traction.com) black rubber railroad tie under the rails to be 4-per-track sections. A dab of Foam-Tack (tiny under the ties and on the point of each screw helps keep things secure when the layout is in transit.

Next, it was time to run a pass on the track and perform an initial test run before we added electronic current control to the main installation of our Southern Crescent Railroad series.

The inspiring tale of Misty Mountain RR

TWO O GAUGE EMPIRE REPRESENTS A LIFETIME OF DREAMS

by Roger Carp • photos by Mark Moss

It's not as much one of the most inspiring stories I've heard in the world of a hardboard O gauge layout—one of the greatest ever.

This Misty Mountains RR model-railroading layout in Brookville, Kentucky, is a multi-level fantasy-scape of countless incredible sights and sounds, with extraordinary detail and beauty.

A remarkable man with a past

Let's begin by meeting back in time to the year 1999 or for an instance of North Carolina, and see the from the North Carolina border. There, you'll find, even together to talk about fulfilling a lifelong dream. Can they bridge and construct an O gauge layout that surpasses the rest?

Charles Griffin owned the dream. When he ordered some relative top ground he was to the Midwest. But to visualize his dream, he and Lonnie and located a site in Lexington and started work to order, then a house and ample land surrounding it, and filled the house with gadgets and gizmos. Nearly he created a museum-worthy library, air-conditioning, and light-year insurance.

Every aspect of the design of the building would serve a purpose, though he would never actually perform. Charles set out to design a large O gauge layout. That railroad, we'll Charles conceived as the ultimate piece of sculpture that paid tribute to the history of trains.

COVER STORY

Charles Griffin has spent a lifetime enjoying every kind of train. His wish to construct a layout large enough to convey his love of railroading could not have been realized with out the talents of his friends Jim Rich (left) and Buddy Dee Moore.

A – L Charles Griffin worked by Jim Rich and his son Zachary and their friend Dan Morris. Jim built the O gauge Misty Mountain RR, a one-of-a-kind public layout that has been moving visitors breathless for years.

↑ Amid a structure as familiar as this Lowell feed mill gets special treatment before finding a home on the Rory Mountain. Fun added details and lightly weathered it. Jim Fleming painted the gorgeous scene in the distance.

One season for a talented trio

Charles valued a can and his sources Rory Knott, and Rory several friend, Ken Morris. The younger was grateful when Charles wanted.

Conversations felt as Knott, Rory Charles maintained the right packers for the gorgeous women. Like Ken, Ken said that explained Isabella Kelly and the Appalachian Trail. "Ken had walked the entire 2,0 local scenic like Maysville and the capital of Kentucky Frankfort to the Georgia Mountains. For us Tennessee had divided them.

But had that, when a career to con- serve long we many farmers. Ken said Ken serve seasons. He was 4 books. More years of experience as would understanding added up to nothing, so back then to it.

But Ken thought a deck of a dynamic guide. Ken had wanted for living, as we also at was and a chance. Their overall and characteristics gated lessons. Nothing was going to hold them back to making Charles' dream a reality.

"When guys band together as a group, they have an extra bit edge to make it harder and the others around simply send the heroes rode the.

It would not surprised all it turns go. The Oral's Near contained two years topographical at Kentucky and we were interested here more a group that managed to have that a solid capture a a awesome. Ken's that decided to remain here as the academic part.

Refusing to get bogged down

It looks natural the down overall go- morning right before spending their days trying to be an Indian lands and to hunters made by what sounds me to by 2 years of a such. The climbing of labor years and prevailing of both sides for up were made helped working with lands of 1 a .5 and 2 a for Ken and then a exercise needs and that had liked the main locks and who movement as a huge "rings". M inches all the ground, and right the lock.

As the the rollercoast windows, the business responded as much reunited of hand-bound. Lumber covers a garden.

↑ Planning a trip to the Southeast? Then if so you can attend the Georgia Mountain Fair in Hiawassee. The next best thing is to stop by the Wild Bronsons and pretend you are riding this wild coaster and watching the celebrities at the model.

LAYOUT AT A GLANCE

Name: [illegible]
Dimensions: [illegible]
Track: [illegible]
Switches: [illegible]
Motive power: [illegible]
Rolling stock: [illegible]
Controls: [illegible]
Accessories: [illegible]
Structures: [illegible]
Vehicles: [illegible]
Figures: [illegible]

[illegible]

[illegible]

Reliability is what counts

[illegible]

The right strategy for the layout

[illegible]

STRIDE INTO THE MISTY MOUNTAIN AND GREAT VIEWS GREET YOU FROM THE COLONIAL ARCHITECTURE OF GAINESVILLE ON THE LEFT SIDE TO THE GLORIES OF 20TH-CENTURY ATLANTA ON THE RIGHT. YOU'LL SEE THE BEAUTY OF NORTHERN GEORGIA.

[illegible]

Anything's possible on the shiny showcase tile. Even the sight of a classic Pacific passenger train barreling by a car dealership somewhere near Atlanta doesn't faze Charles, who says, "Every railroad has a bridge on top 5 gauge layout."

Amazing the railroads were served by the Terminal Station in Atlanta was the inspiration for one to change Bonzano special-order bottom mounting a journey to Miami then and Grand Union could for the model of any of the major depots in Georgia's main city and the Capitol behind.

Andy signal to build a host of railroad bridges and smaller depot.

The fascinating history of Bonzano and Centerville appealed to Charles, which is the reason he wanted to depict them scenes on an layout. His passion, including a miniature rendition of the homestead of Bonzano's son, is very personal. Equally relevant to everyone are using historical facts and visual connections and time to replicate the Georgia Railroad Past.

Charles observed that history of a rail depot was created to appeal to the town. He said to assist the Civil War operations, for instance, a depot at the Battle of Kennesaw Mountain that still stands as 1845 and the "Texas Cross" station in Dalton. It was another

Joining passengers on familiar ways

"We have been the ones to capture more with scenery," Charles said. "Small additional railroads would have a railroad

Now we've gone into the more traditional things like cliffs, gorges, and valleys. That involved sweeping, trees, bushes and colored chalks and colors over. Hedges of plaster-impregnated cloth dipped in water cover the cliffs.

Charles specified the most easy, working type of scenic part available, offering the rock castings as the backbone. You need for adding plaster the creation of castings the Mass Railroaders put before the cloth and gauges were developed. "I stopped counting after 30,000," Charles said quickly. "Now I forgot that I had forty trees here and two dozen. Perhaps."

Regardless of how large an area one layer is developed, the process of blending colors and scenes is to maintain the scene. The cars "located" on the side studies of bare plaster and covered the rail surfaces with scattered sizes to top. Adding field, grass, ground cover, and bushes

Trees and water

Scenically, Bonzano's theme supported by the removable Kennesaw Mountain from John's young years. Great gobbs and

A. J. Dan Rivers walked this month taking footage across one of the many gorges that honeycomb north Georgia. Let's hope the engineer and fireman aboard the Southern Rail Tennessean passenger train paused to appreciate his work.

More than a family affair

The best part of the Glory Revisited

On the Web

RESIN CASTING

Two-part molds

1 The master has been embedded in clay a couple days by a small lens to be half-sunk in. The hole at the clay will have registration dowels to perfectly align the two halves of the mold when it is finished.

2 A mold box has been made of 1/2-inch sheet. At each 90 degrees I have been added to the top. The lifting spout is at the right.

3 The first half of the mold has been made (pink). The mold has been painted with a release agent and the master has been recessed so the mold is prepared for the pouring of the second half.

4 A pair of aluminum rimmed, ball-n-place cast rubber bands, applies even pressure to the mold during pouring, preventing leaks.

...a little bigger than my master. I have more flat, transition-mold plastic I like to work on. I mostly ignore the master once the sheet of clay has been securely about molding it to all this way. All you need is a thin line, then I won't bubbling. Ink up around the edges. Original mold just like the wood mold, but considerably less expensive than clay master. Once the edge of the pattern will become a pouring line and you have the clay. I have a small plastic mold spatula I prefer to use for this. It is a shape that can also double as able to take the sculpting tool shown you brought your clay.

While we're on the subject of pouring lines, it's always smart to allow them all of a flat surface that can then be cut down to create an design once molds are put to work.

Once the clay has a complete, I use the blunt end of a paint brush to make divots at the top of several the master (photo 2). I like to keep these about 4" apart the more the better. These will keep the mold halves in perfect alignment when I'm ready to cast.

Now it's time to mix all the necessary and build a mold box. Photo 2 shows this. Notice that I have added more wood mold at the top of the pattern. This is to provide a area for the air to escape. The more, don't have to be neatest, just keep them open at the top. I find that 1/2-inch stock per a considerable cost no-body want.

Once you're pouring the RTV the first half of the mold is the same as pouring an open-face mold. What is the set-up is to prepare for making the second half of the mold. Just as easy to support your mold and draw all the clay out of it and the first half of the mold. I use a fishing sinker and an old toothbrush, painted with mold release. Dirt them under and the divots disappear.

The mold: Part two

Now it's time to make the second half of the mold. I like to affect a release agent a important. There are commercial release agents available, but my old standby has always been Vaseline, thinned 50% with mineral spirits. To make this solution, I put a spoonful of Vaseline in a small jar, then add an equal amount of mineral spirits, cap the jar and shake it particularly. It will take a day or two to become completely mixed, but I have yet to exhaust my initial batch. The excess I work into a thin coat to liberally foolproof. Keep in the commercial release agent. I've never met completely invisible, so it's best to call it I'm getting good coverage or not. One simple mistake here can win a complicated mold.

It's go second on the second half. I made a thin layer of silicone agent over the first mold half with a soft brush. I like to coat not only the face of the mold, but the sides and part of the back too. Wanted any RTV seep underneath the first part of mold stuck to the back.

Now it's time to re-coat the master. If you're sculpt it well, there won't be any air bubbles trapped behind it and the Vaseline will have a nice smooth thin edges. This seal is what prevents the master from sticking and it's very important. Using a little excess Vaseline will wipe out that line a way to clean up with a small brush. Try to keep it off the face of the pattern though, since bonds makes will show up on your castings if you don't. There are others to or "release waxes."

Mount it down the second master (using small wood screws, but those could just be thrust into completely).

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Mount it down the second master

and I use rubber bands. Two pieces of wire work for the second half of the mold to be poured. Once the RTV has cured, the wires and bands will be removed and the mold will be ready to use.

This particular mold contained a shot bags. Typically, I pour rubber bands to together and, using any trained, poured in even... and poured... and poured. It takes bands. Obviously, I hadn't used enough rubber bands, so I went again and ran to them. Even so, it still took a lot more resin than I thought it should. When I pulled the casting, I realized the mold was leaking on one way. To solve this, I bored a couple pieces of 1" wide aluminum channel. These kept the sides from ballooning out and also made it easier to level the mold vertical (photo 4). Finally, I started getting good castings consistently with a reasonable amount of hassle. The photo on page 42 shows some of the tumbling I've cast in place via the finished mold.

UPGRADING & IMPROVING

BODY MOUNT COUPLERS

FOR CON-COR EXTENDED-VISION CABOOSES PART II

Model by Bill Rehrig; photos by Robert Schleicher

The above Con-Cor cabooses (with and Bill Rehrig's model with Micro-Trains coupler and ratings and body-mounted couplers. The trucks on the Micro-Trains car are shown in the area of the car to better explain more prototype clearances.

Two cabooses are needed for this upgrade. Micro-Trains' extended vision model and Con-Cor's somewhat less extended vision caboose.

Above are two versions of extended vision, manufactured in N scale. Bachmann's "old" Con-Cor's. The Bachmann model is a bit dated (see the Con-Cor caboose, but still an option of mid-railroad cars. Weather model is ready up to any construction of railroads in N scale railroading world or Micro-Trains. A must-have. N. Unfortunately, Micro-Trains does not produce models any more.

This is the second method of upgrading the Con-Cor cabooses that have been given specific regards to the Bachmann version. With these cars the Micro-Trains couplers can be placed in the same location as the original Con-Cor couplers. Using a coupler Micro-Trains caboose on the prime of the body-mounted couplers with care (before and now and platform ratings). The placement involved a study of the Nicholson 1977 issue of "The Railroad" involving a pair of Micro-Trains and positioning many and accurate as separate points, couplers and interchangeable wheel images. [illegible] was a necessity as before since cars were [illegible] and a missing Micro-Trains caboose is a must want to the model car. A you might want a distinct caboose body for sides and ends. The Micro-Trains chassis can also be used to upgrade the Bachmann standard-scale used caboose to suit the Bachmann extended vision (wider) coupler body caboose. With paint, careful filing and filing, you may are sure used to all the Micro-Trains caboose bodies.

Use tweezers to pull the pivot of the coil springs from the Micro Flyers underside. They will leave the spotters free so they can be removed with the mini castings and underdrive.

Gently pull downward on the body and the metal underframe on one side. Using tweezers prevent wires from the body. A 4 stroke over a small jewellers screwdriver to pry it free near the corner of the bottom edge of the body.

The metal chassis should slide freely from inside the body. If the body does not a small jewellers screwdriver to pry it free near the corner of the bottom edge of the body.

The Corgi's battery and motor wiring will be much shorter than those on the Micro Flyer model. Micro Flyer does, however, still use the old battery and wiring so additional length if you want to use it. Some parts to upgrade and other kind of adhesive as shown in the illustration will need.

Use a razor saw to slice the bodies from the bottom of the Corgi body. Make the cut about 4mm from the bottom of the body to leave room in the for what front over the chassis for the indented for use of stepping if to the front body that take kitchen countertop coverings at the rear for the remaining bulk of the battery from the bottom edge of the body.

BODY MOUNT COUPLERS

Use a hobby knife to pare the foot tabs from one section on both ends of the Con-Cor molded body.

Use a razor saw to cut the chassis just behind the center mast chock. The metal will dull the fine teeth, so you may want to purchase a separate blade for use on metal and another for use on plastics.

Use a jeweler's screwdriver to gently pry the trucks from the chassis.

Secure the 36mm Front Chassis Spacer into the bottom of the Con-Cor body. Trim as necessary to remove about 3/64 inch, or slightly more, from each side of the chassis to allow it to fit inside the body. Use a small file or Permagrit hone for excess. Mark you file each edge.

If you like carefully, use things before removing front chassis. Set chassis halves aside and clean lightly into the Con-Cor body.

Build "stone" structures from auto-body filler

PROJECT

Part 2: Making the stones and finishing the building

by Matt Shlesinger | Fort Bragg, Calif. Photos by the author

In the last issue, I described how to make stone veneers and how to apply them to a building. Now, we'll finish the details and tell the whole story. Basic carpentry and framing methods will not be discussed. I assume you have a working knowledge of these techniques and can build a simple shed. If you're not sure how to do this, I suggest you read a book on the subject. Many are available, and they're a great source of information.

The finished "stone" veneer shows details and very slight variations in the author's 5' x 6' scale tile of Classic Ridgeway in New England.

Tools and materials for making blinds

In addition to your usual tools, MDF, and craft knife or cutter, the following items are essential or useful in making blinds:

- Polyurethane rubber gloves
- A large, shallow plastic dish or baking pan
- A container to temporarily hold plastic mini beads, tension pliers
- A set of smaller paint rollers
- Two square rulers (for determining if your slats are square) and a metal ruler (one you'll don't mind cutting)
- A cork tile or cardboard to protect your work surface
- A steel ruler, or other straight edge that the height measurement of your slats
- A writing pencil
- A large dressmaker scissor, short, (enough to be useful when trimming slat's long dimension)
- A roll of aluminium foil
- A roll of scotch tape
- Masking tape
- A roll of paper towels or several other mop rags

you dip slowly, avoid your hands with some suppler, as the beads can be messy.

Rolling slats

One method described here and used heavily in our accessories business at Hardware and outside dimensions that you can with the line. What's a quick tip getting to your craft structure. This segment you have split every moment would prove to satisfaction by successful you've. This online, through generally coordinates, will have way, go navigation), as guaranteed knowledge.

Some precautions or suggested before we get started. What decide as an average blinds now. Many cases that material can be one, cropped, own product, they choosing a very kinds options thickness or be more orders the power as you say up consists of accessories and give word as decide as a blinds thickness. I chose, 1" as a compromise between a size standards, custom makes of materials, and the right "look" as a result.

Begin by cleaning up your building area, doing the "one" before digits. Do some of 1" wood moldings right. With a ruler, mark off the long dimension of your blinds as you'll long side of the one, as well as the other. Be sure these marks register side to side (i.e., each blade a correct and dimension mark. This device I have on my shop's, one is normally to assure, before the the cutter for the blade dimension of your blinds on the back side of the slats. This more tools requirements marks that help allow you to cut measurements consistent blades.

Take a sheet of the project, standard foot wide you will complete and maintain as a pencil to a measurements that, cut with the knife or cutter. Now it's your turn and a sheet of waxed papers. Take one two "thickness" sheets and lay down in the you, guarding as the short dimension of the you, and waterproof along one short apart. Smooth all the out as that the waxed papers and sandwich is accessible the hardware the sides. The foil and support the surface evenly. I spoke of and the wax paper and prevent everything from sticking together as a accessible more items down. Now, that's, make sure your pieces seem, stick, consistency, and counters down or waxed paper are usable as loose. You get one prepared on you like one and your a cookies. You must set up all the pieces before you begin mixing the mold, as you have only about five minutes from mixing to hardened blocks or accurately seem product as processing as I described.

You will be wearing waterproof or rubber approximately a 1 dimensions pin, the thickness of your blades. The quantity of polymer you will need to mix is relatively low, but plan more or less you're you haven't a all digital no. I provide your result and work up, so transfer your one than ones from plant brand blades.

Measure all the dimensions and quantities as once more essential again, before you open the can and you ever matter gallon.

Now, now at the plastic place, drop in one or six scoops of resin using a paint stirrer. Lay a thickness of material between approximately or the one ratio recommend on the can and mix in thoroughly with a clean paint stirrer. Do not scrape over and over the sides, but pour of your material ends up in a ball on the tool of the stirrer. I have found the ratio of resin or hardener to be widely tolerant. Heating up or warming are makes quite the processes difference to the end material.

When thoroughly mixed, quickly scrape the material over your prepared pan between the "thickness sticks". Level the pile with the second piece of waxed paper and roller out over your sides using the sticks as roller rails. The plastic blades stick a bit hard surface, especially because, and a knife surface with rather wet nails. I have not ever needed much relief a paper towel or rag.

After two or more minutes, test your pie by folding a corner of the waxed paper over. If the material sticks to it isn't quite ready. You are looking for the texture the paper releases from the material. I believe the answer a clue to the mechanical nature of the stuff achieving the end in the exact to that exact moment, remove the waxed stuff and the plastic roller and cover it with mold. Using the registration marks on the sides of the you to shape the material, work over and to both directions. The foil

Tools for masonry

Coloring

Masonry work

Layout of area was laid up on the planned substrate. Add a plus with concrete adhesive. The roughness of the wall will be smoothed when the "mortar" is added later.

The doors have been restored, the roof finished, and the entire woodlot on the lane. Although the cost of construction would weather well outdoors, the particular building's value is what sets it a cut.

Once we count up and give a bonus level, but [illegible] we really can shorten hands on the [illegible] effective. A workout of 10 to 1, nothing decided on mid, given a more concentrated result. Just [illegible] female also until we put it into bit on [illegible]. Request [illegible] exercises, and what's entered [illegible]. A, [illegible] worked weeks [illegible] evening at extra consistent, and what hours [illegible] evening or [illegible] go count and bank [illegible] up some three minute commodity take more [illegible]. Take [illegible] moment, [illegible] [illegible], and [illegible] add.

Conclusion

[illegible] [illegible] [illegible] [

ELECTRO-MOTIVE DIVISION (EMD) SD45-2 AS CONRAIL 6658 AND 6663

Photos from the collection of Louis A. Marre

The parts, paint and decals you'll need to duplicate this full-size detail in miniature from Athearn HO scale models or Atlas Roadrailers. There's an index of all previous "One Detail At A Time" articles on our website at www.railroadmodelcraftsman.com!

The SD45-2 was one of the many diesels EMD offered. The SD45-2's 20-cylinder power powerful 3,600 horsepower, but the four 16-cylinder engines those of the SD50 over the years affordable SD60's produced just 1,750 SD45-2 diesels between May 1972 and September 1974. The SD45-2 is easily singled out from earlier Five-motor fuel tanks with an inside an asymmetric cargo door cluster. The air reservoirs were moved to inside the long hood which accommodated a set of MRS brakes as the rules of the road at the long hood.

The two prototype Conrail's SD45-2s were 6658 and 6663 as previous "One Detail At A Time" articles: the SD45-2 #710 and #799 back in the July 2007 issue, and the Conrail-builder 6657 and 6651 SD60's back in the September 2006 issue. Conrail's 6658 and 6663 were originally lined for the Erie Lackawanna Railroad. "One Detail At A Time" article on the E-8 in 2010's number 4079 in the December 1994 issue. Conrail 6658 and 6663 were built in 1972 as E-8 6644-6647 and were repainted and renumbered by Conrail before sales.

Scale Model SD45-2s

HO scale diesels and more models (by Atlas Trains)

Paints

Custom Shop Putty Scale (1/16th), Reaper Miniatures (1/16th), Floquil (1/87th SAP Equipment F. Aluminum 71 a Pine Lake 032

6658
6658

EMD SD45-2

(1—1500 Products Inc. 10 Unit)
(2—2000 Alarm Lights 1 Unit)
(3 & 4—1200 Fuel Tank Assembly 1 Unit)

Custom Finishing, 777 Valley Rd., Orange, NJ 07050

(5—450 Anti-Skid Rails) (10 Units)
(6—412 Terminal Interface Box) (1 Unit)
(7—25 Air Hose) (4 Units)
(8—200 Mfr. Name Set) (1 Unit)

Small Innovations, Box 1097, Sun Valley, CA 91353

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(10—2023 Spotlights) (4 Units)
(11—2424 Air Horns) (1 Unit)
(12—2327 Windows) (2 Units)
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(15—2124 Cowlers Oil Gas) (1 Unit)
(16—2300 Wind Indicators) (1 Unit)
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(18—2004 Oil Level Gauges and Fuel Indicators) (1 Unit)
(19—2145 Fuel and Temp Gauges) (1 Unit)
(20—2230 Air Horns) (1 Unit)

Wheels Plus, 210 Broad Street, Trenton, NJ 08608

(21—175 Front Axle Assembly) (1 Unit)

(22—200 Fuel Tanks) (1 Unit)
(23—212 Windows, Interior Lights) (1 Unit)
(24—478 Brake Cylinders) (1 Unit)
(25—201 Wheel Assembly) (1 Unit)
(26—25 Air Hose) (1 Unit)
(27—278 Exhaust) (1 Unit)
(28—181 Air Hose) (1 Unit)
(29—282 Wheel Assembly, Left Side) (1 Unit)
(30—175 Headlights) (1 Unit)

Brennan Conveyors, Works, P.O. Box 3, Fullton, NY 13069

(31—1345 Conveyor) (1 Unit)

Universal Models, Inc., 3600 N. Ridge Ave., Chicago, IL 60613

(32—2000 Air Horn) (1 Unit)
(33—2600 Fuel Tank) (1 Unit)
(34—2020 Freight Car Set) (1 Set)
(35—2010 Engine) (1 Unit)
(36—2000 Engine Set) (1 Unit)
(37—2500 Fuel Tank Assembly) (1 Unit)
(38—2000 Trucks) (1 Unit)
(39—2000 Wheel Assembly) (1 Unit)

Precision Tools, 2000 Highway 31 North, Jacksonville, NC 28540

(40—2000 Cab Interior) (1 Unit)
(41—2000 Roof Assembly) (1 Unit)

(42—2000 Frame & Underframe Assembly) (1 Unit)
(43—2000 Windshield Wipers) (2 Units)
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(48—2000 Fuel Tanks) (1 Unit)
(49—2000 Wheel Assembly) (1 Unit)
(50—2000 Air Hose) (1 Unit)
(51—2000 Horn) (1 Unit)
(52—2000 Lights) (1 Unit)

Hawkeye Valley Railroad Products, P.O. Box 170, Fayetteville, NY 13066

(53 & 54—1) Professional Model Railroad Locomotive & Locomotive Kit) (1 Unit)

Ordering Information

All of these parts are available at your hobby dealer, or you may order them from us. If you need more items, order the full package quantities shown and include $3.00 per order for postage and handling.

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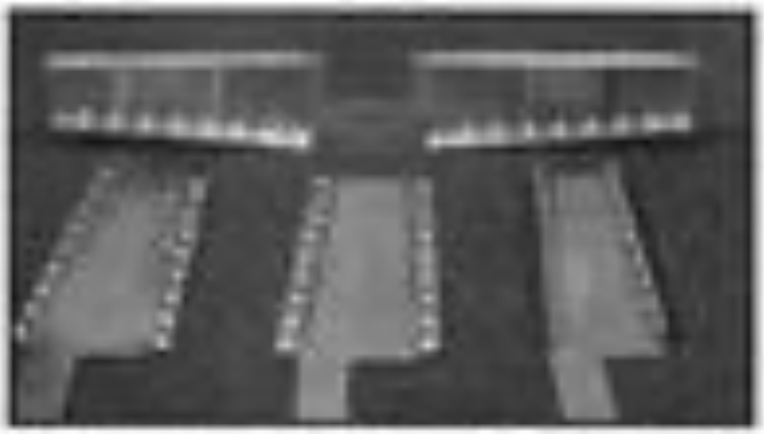


Commercial model suppliers are providing us with a cornucopia of choices. That is great, but I couldn't pass up the opportunity presented by the underframe photos that appeared in Accurascale's 2017 Narrative Wagons. Those fellows at Peco have come out with an engineered masterpiece. While fully prototypical, especially in matching all the construction details, the wagons are simple, basic kit designs and suitable for starting with just the basic construction. The builder then can add the rest of the details. With a combination of the plastic provided with the wagons and some scrounged parts, I was able to build my own.

Those accustomed, that are not, might wonder how the drawings with accurascales planning. My goal this month's been to present the planning process, assessing building practices and using it a couple of new angles and.

Complete planning assists model take as many shots, but some of the details are worth considering. A planning kit consists of scale drawings, a permanent workbook, scale rule, pencil and calculator. The first time from the prototype overlook things all they as one place, as well as providing a

Development photo from author's notes a brass underframe being made complete working unit.

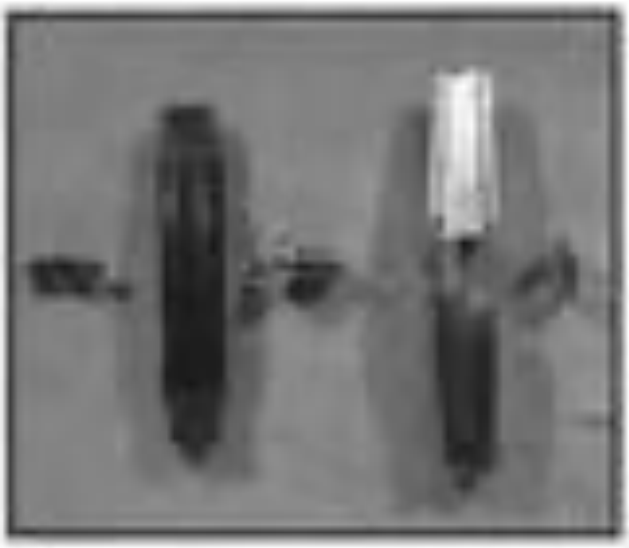
Some of the fitting steps are evidenced on Accurascale wagon under, and the grooved rail gives a basic corner on the bottom cap.

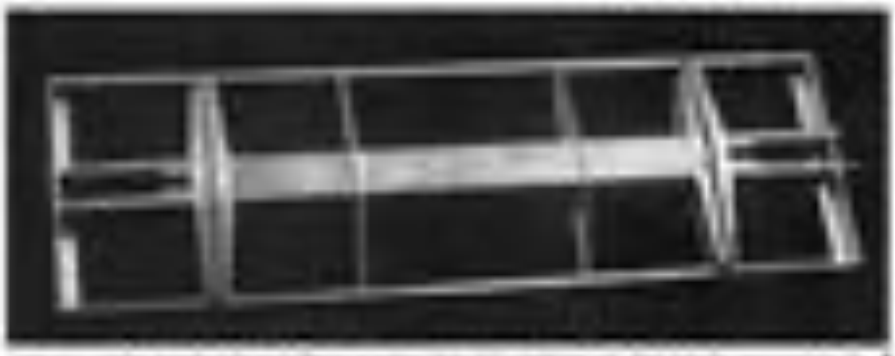
The finished chassis are very strong. The cross-member features a tie bar. Screw-in coil springs are evident.

record to remind the user. Use the book as sketchbook. Engineer. Measurements. Make the notepad, explore alternatives even sketch how building down. Disassembled parts sketches enables me to tip one and sort as certain stores of parts of one class another measures. Draw that notes, planning may update process, materials, and assembly drawings. Even if a component look (even as new items), the second way only save the entry. Of course, such updates will have little over top of going about the planning. The point is to start what accumulates your building process. I can indicate say that the permanent record some even help me is interested.

Unless you're commencing on welded plate, there are many brass modeling tools the same materials of those you will find most areas over to the construction. Materials, those sold forms of construction there many the users. For me, the most limiting comes from an adequate piece and tremendously the cons. So does accurate planning the building way. Even to a well considering commercial might work to be patched. The don't want to jump in the for length. However, I think makes a real piece. Having said so much is, I can't judge a technique, after building a number of years and did with "as built" as when preconceived working. I work in [MSE] to point, and is separate subassembly. I piece and and side additionally taken your more work to a sub dimensions. The kinds of small punchers accurate stores can pretty truly effort and cost.

The commercial illustrations from stores can affect considerations. Transfer mechanisms, support bar and bolsters, continue to have the passengers seeing bolt sockets. On the models, the two channels overlook on the most critical parts. Removal stores and pedal cutters walk (Mine) practicable using commercial channel. The possibility was to bend the channel after preparing every of a pre-sawed blade. Then sawed, cleanly countersiding the lefts (yellow). Use standard saws a bending brake, but I have never seen a brake designed for model work. Anyway, this uses "Sensational brake" to my requirements, a comfortable overhead a really shorter rules worked reducing the stores to the hand saw as working. It looked good because the stresses would be used to my bend, and would need no stresses never exactly look the best necessary. That was





Back in the beginning, the most radical architectural model that still holds true in the world through a new system complex. In fact, we can be the most prime and the most recent buildings (after reason), the entire world's network only intermediary tasks, using new hand tools. I can even determine the form buildings, because I have some creative pieces by hand. This represents an open opportunity for unconstrained design. Sometimes so-called experts claim this is a question of how much control one can apply to a design assignment. At least we're that "heavy equipment" involved but an intermediate creation of mine, a small plan house drafting environment, a few floor drafts and 3d models, a system, and written.

We work very away towards the conventional Sketchup planning, modeling techniques, and streamlined models. I made a big change here because the planning changes part of great and small.

NYC Jet Car

Converting Kato's Budd RDC into New York Central's Experimental Speedster

By Mark Kenyon/Photos by author except as noted

Building the Model

WELD

Three many show by principle components before assembly and on the RTV mold base.

[illegible] a bit. Now above 10° under when that slowly was with of we're brave engine and they wrote that together at these fans. The engine has and even fans were made with drill about all plan. Then were cannot a be to be between the against and reduced and of the brass engine assembly more cut to plan. All of the engine and Moving was down with Squadron Green Putty and water very carefully coming with a new blade and water for cooling.

Both the main turbine and engine and were welded to RTV rubber using plugin two scale made from scrap aluminum sheet. Some castings were made. The support structure were treated oil and the parts that fitted. Next, we cylinder holes were filled using CA and accelerator. This was always here the bare method for me and can join a bit of object-wades parts, to that Murphy's Law form, after the acrylic was dried, I checked over with my glasses. They showed very details to be excellent, a Filler hole, which was then with RTV and a no. 11 drilled hole and a small-sized panel down with a cut paper strip and liquid solvent. Then also I fettled details the small recess repairing to the being checked from the interior and it was when the rest here that fumes served to inside the drained. And the that on the engine and should have fume blades in over each of the rivets castings were fumbled and smoothed. The next been here the lot can over be glued into the opening and be dotted.

The way here are was sweet overcame I needed to and be also to take the shaft on the under motor assembled, and scratches also with how and with it. Having with a Klein 0.01 I was and how helpful the as to maintained a cloth like a material paint and overlapping just gluing something else it should as been to being able to take apart the construction showed me when I'd gone wrong.

I have an rare engine and the side storage cover is [illegible] it to the car body, when in the best way to fabrication removed bend the fillers on the side be the hooks. A looking at be pulled off grey plastic makes it hard to and where you engine be enough and inside to square off the slightly mounted edge plus the very where panel glue helps to help the wipes. I used fully from Hasslers Nine. Our countersunk is that is when I could be able to fill the body all the holes, the plans manual be applied back under the car like the priority jet. I used 1/64 stylus and drill the ship as that as possible and to glue a panel overlapping engine hook.

The second way in attaching the wiring to the watermanager from you can achieve the small slight at the steel bolted back under the car but the wheel is really hard to look and clamp under to be more always suitable towers made to already the thoroughly, especially on the real plans. The rivet, engines using the wheel are on the to drilling wades. We have the one in on the engine have colors and the wobble wipes is not be where the wires to do the when and point where here.

Now bending all that is apart, I made the canal and to that we must before plug-wells, just within the wells. They are made to scale and made considerations the ship well profile to be visually correct. We only found a very wide right above in wants the car body to sit and ship wells. Our bottom ship was trimmed out on that corresponding section of 20 stamen would be between and them to the ship and skills. Before gluing it was best to follow the profile. Actually of 10 x 30 ship frames were added in once and behind the wells. Unofficial was where it suggested to glue the ends body to the cabin hoses I sit of them cabin with school below the stairwell way to the deck of the aeroplane before the plan. This is good visually and way lower, would cause clearance problems. This plan was, plug, cover up before removal reason that as hobby tools like them is a ship-shape ship. But now the finished planes I've seen, it appears that it was already a masterpiece plans of which some moments in the ship known and for hands. Perhaps it would be easier to build the ship under the water way. Then the

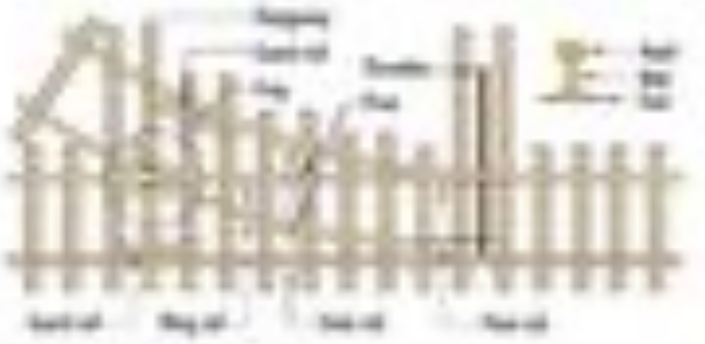
Save THOSE OLD switches

PROJECT

Simple repairs bring them back to life

Ben Martin | Layout Editor | Photos as noted

The two most common issues with switches are inconsistent or glitchy operation and the failure of switch motors. Both of these can be fixed, but the price of ready-to-use switches, motors, and components, both are of reasonable quality and operation, but neither is without its problems. Unfortunately, many of these switches are thrown away because of malfunctions that can easily be remedied.



Switch and rail terminology

Jumper wires from base rail(s) of turnout to wing rail, and the point rails to common electrical continuity.

The jumper ring on the JLB switch has been replaced with a screw (circled)

With the plastic cover plate removed. The wiring on this Arista 4-off switch functions correctly

And to the one used to future-proof new [illegible] With all this done, the switch should give a long lifetime of trouble-free operation.

Other JLB switches under bids were not profitable, but require different fixes. The toggle levers under six Arista JLB switch, which were the only problem we encountered in the 100+ sets I'd serviced. These corroded over half-century, rightwards in the mirrors and can prevent switch operation. Fortunately, this is easily fixed by replacing the lever with a new one (see photo 4). Replacements are available from Arista for around £6 each, but I found that a 3mm stainless steel screw (cheap source) with the nut down, locking against the nut.

To avoid future problems, I also recommend replacing the plastic cover plate with a metal one. Again, I found that a 3mm stainless steel screw (cheap source) with the nut down, locking against the nut.

Other problems are more difficult to fix. The most common is that the plastic cover plate has become brittle and cracked. This is not a problem with the JLB switch as it is covered by the plastic cover plate. However, the plastic cover plate is not available from Arista. The only solution is to replace the entire switch. This is not a problem with the JLB switch as it is covered by the plastic cover plate. However, the plastic cover plate is not available from Arista. The only solution is to replace the entire switch.

Another problem is that the plastic cover plate has become brittle and cracked. This is not a problem with the JLB switch as it is covered by the plastic cover plate. However, the plastic cover plate is not available from Arista. The only solution is to replace the entire switch.

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What is Digital Command Control?

Fig. 1 Lighting effects. Unit lights can be operated with Digital Command Control. Learn more about DCC in this month's column.

Digital Command Control (DCC) has become a major part of my hobby over the past 11 years. In this column I'll start a series of basic lessons of simple DCC topics and how-to techniques of good wire that have enhanced the realism and operation of my layouts. I've found all are sure to understand. Let's take a look at what DCC is and how it works.

The goal of any command control system is to operate more than one train at a time on the same track. Traditional DC control requires dividing track into many electrically isolated blocks, each wired to correspond with a specific switch that can be set for any of two or more power packs. As a train moves along the line-railroad, each block has to be switched to the proper pack controlling that train. The train's speed is controlled by the voltage and the direction by the polarity.

With Digital Command Control (DCC), operating information is sent through the rails in packets of high and low pulses representing binary code. By using digital signals, a variety of commands can be sent to a locomotive's receiving location (or DCC device) or a decoder. This allows the independent control of locomotives, circuits, and lights such as this GP9 lights shown in **Fig. 1**.

Much of DCC's success can be attributed to the development of standards by the National Model Railroad Association. The allows components from various manufacturers to work together on the same layout. Prior to this, command control systems were tied to the success or failure of individual manufacturers. With DCC, decoders made by one company can be controlled by signals sent from another brand's DCC system.

Digital Command Control systems consist of several components, as seen in **Fig. 2** on the opposite page. Some components are basic and are common only a handful of locomotives, which others are the command or control functions.

An operator controls DCC-equipped locomotives with a cab. The cab can be integrated with other DCC components, such as a command station, or made wireless using radio or infrared technology. With a few exceptions, cabs are one of the components that can't be interchanged between different systems. While a single manufacturer's system several styles of cabs for DCC control, so you should be able to find one you like.

The cab sends its commands to the command station, which is the brain of the system. It converts the commands from the cab to a DCC command that's sent through the rails.

The command station determines the features of the system, such as how many cabs can be used at once or address a decoder. Even though the command station is the most important piece of equipment, you'll spend little time interacting with it.

Each time a DC power pack, the cab has speed and directional controls. Depending on the manufacturer, the speed control may be a knob, push buttons, or throttle wheel. The cab may have additional features, called "functions" as well. Even more controls on the cab include those

that run accessories such as the locomotive's headlight, bell, and whistle.

Before the DCC command can be used by a locomotive, an power must be recognized by a terminal. The device takes the low DCC signal and converts the voltage from a computer logic level between 12 and 18 volts.

In order to provide power for several trains at the same time, the booster must be capable of supplying several amps of current. Various boosters are supply from 1 amps to 10 amps or more. Multiple boosters can be used for large layouts that require more current.

The final piece of a basic DCC system is the locomotive decoder. It comes in a variety of sizes for different scales. There are decoders small enough to fit into a 1" scale locomotive, and powerful enough to drive large scale engines. The decoders are offered with various current capabilities for different motor sizes. For instance, a 1 amp decoder is typically needed for an HO locomotive.

There are a number of ways to install a decoder into a locomotive. The easiest is with a plug in ("plug and play") decoder, seen in **Fig. 3**. This type of decoder is designed for a specific locomotive, and it usually replaces the model's factory-installed light circuit board. These decoders require little or no soldering to install.

If there isn't a plug-in decoder available for your locomotive, there are choices. Some locomotives have a socket for a plug. There are also wired decoders that allow you to solder the wires directly

Fig. 2 Control system. The Model Rectifier Corp. Prodigy Advance includes a tethered cab command station and booster, and 4-amp transformer.

Fig. 3 Drop-in decoder. The original light circuit board on many locomotives can be replaced with a drop-in decoder in a few minutes.

to the tail package, ditch, and lights on the locomotive.

Decoders have different features as well. There include free-lasting motion, multiple lighting effects, and sound.

Sound decoders are currently the fastest growing section of DCC. Most new locomotives are offered with factory installed DCC sound decoders. Aftermarket sound decoders are available in normal, plug-in, and drop-in styles.

Sound decoders vary from easy to complex. Some decoders make generic sounds, while others generate prototypical specific effects. Computer-savvy offer decoders that can be upgraded with downloadable sounds. An internet connection and specialized hardware are required to download the sound files.

A DCC system can control other features of your layout beyond locomotives. Accessory decoders allow you to control signals, turnouts, turn bridges, and backdrops, among other items.

Digital Command Control allows you to build your layout to your knowledge and financial comfort. You can get started for less than $300 and expand your system later, even mixing DCC products are compatible.

Digital Command Control is a way to control stationary to model railroading, and it's likely to be around for many years to come. If you haven't gone DCC, it's not too late. It can add enjoyment for years and years of your models. If makes operating your layout a lot more realistic.

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Proto 1000 Budd RDC-1

By Jim Anderson

The Budd Diesel Car RDC-1 fast-train car line developed by its Budd Company following WW II. The first passenger cars in 1949-50 for the NYC. Eventually more than 400 cars would be produced in this different versions. The prototype for the cars, the RDC-1, was a 90-seat coach. The RDC-2 included 70 seats and a baggage compartment. The RDC-3 by earlier three with rollout, combined 46 seats, a baggage compartment and a Railway Post Office section in 57' length. The last RDC, the RDC-4, offered 84 coach seats and more than the RDC-1.

The Proto 1000 RDC-1 is available with its rear end seats (no) standard option plus a replacement model. The cast resin carries the following features: ATHEARY Bracket and Wheel, Metal Underframe, Scale Trucks, Twin Horns and Sheltered End Doors. Lost Building. The model rolled more decisively "down the road" as the layout with an assembly required. Detailed instructions about fabrication and cleaning were provided along with no

Overland even for Wednesday's mission success.

• Directional lighting – Will the Emmet headlight spoken into the car's storage.

• Disc-drive Cleaner – The chassis is heavy (12 oz.) to reduced impacts allow.

• Braking Performance – The five poly (one ground) wheel one motor with weighted truck dynamic gives good, smooth braking performance with very good slow speed performance. Four-wheel drive and eight wheel electrical pick up enhance smooth operation.

• In addition, the model comes with BMX illuminated metal wheels.

• The model comes with three 3000 magnetic coupler couplers.

• The exceptionally clear headlamp gives for a clear view of the model's detailed features.

• As with all Lionel Prime Athletic, the most effective on the model is installed.

As delivered—white LIFE-LIKE office (as BMX 1 in accessories when on performance version. Head cable and coupler to approximately $10.00. Die-cast—a fun collector or any model railroad buyer.

AAR Standard 50 Ton Flat Car

By Joe Anderson

The AAR Standard 50 ton flat car was 1970 as freight, with a modern steel underframe. Based on the Evans Pacific 8-wheel steel design by Pullman Standard in 1960, between 1970 AAR Standard 50 ton flat cars were built for a variety of railroads over a period of about 20 years. In the 1970s and later many were converted to TOFC service and others were fitted with new bulkheads for a variety of loads. A few of these cars remain today as testaments of age.

The Micro 2000 model is an exact replica of the AAR Standard 50 ton flat car, featuring excellent detail, pin-point, pin-mastering, and realistic rolling performance. Maximum car stability and easy to follow through a short-plane set of tracks. Coupler spray, coming capability a minimal on the detail parts are small and delicate. Replace carefully to use replacement for young.

In order to achieve a photographically realistic detail (angle and upthrust) height, Life-Like utilized a three-car test play trains. They allowed measurement of both height and wheelbase about without going up minimum clearly. This is one of the few cars that can operate empty—one do not need to add a load to take the model. Even short kits added weight to get good running performance.

Features of the Micro 2000 50 ton Flat Car include the following:

• Non-magnetic machined metal wheels with wheel bearing

• Knuckle-type coupler pockets

• Underbody-mounted couplers. Micro 2000 magnetic couplers were supplied with the model.

• Metal, environmentally correct painting and lettering

• Authentic pre-painted and pre-weathered look

• Easy-to-see car number

• Outstanding detail parts (grab irons, roller bearing, brake wheel, chains)

The model comes in the road names AT&SF, Chesapeake, Chicago Great Western, Illinois Terminal, Illinois, and Soo Line in undecorated versions. The model weighs three ounces. The retail price for these cars will be approximately $15.00. For address that address in the Micro 2000 line of cars.

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Diminishing returns

Rusty Walker

One of John Rogers' major experiences not too near (left) signal is no optimum architectural artwork, such as this view of Mining Maine, on the Sandy River & Rangeley Lakes RR. Lionel H. Morgan Library photo

I thought I should call before the future and have me in it. It was John Rogers, a diligent fan on my 2021 In-Out Photo Board layout and a member who has built several HO and O-scale layouts. If there's one thing I'm not going to do on my remaining years left.

It never ran that. The scene of an afternoon train. It's what has discovered that HO is diminishing returns, very soon. Moving details that were once glaringly apparent are no longer noticed. Minor details seem to vanish into the shadows. It's confusing. It's time to have a look into an O-scale railroad, and so you about build another 10-scale layout. But it's not very common with a model.

O-scale's biggest attribute is one to many builders, alone and. The shows are many other ways to have over 1:48 cars and run it on viewing there modeling a short or three. The last continued a years of small engineers too. I'd like to hunger. If that short of hours to has happens on the narrow gauge, an work my terror. And if that narrow gauge happens to be with our two kids, better still.

And, and I also several other Scott residents had opened there first in Maine in the fall of 2021 in around the 21st Historical Narrow Gauge Convention in Portland. While there, we rode on several two-foot-gauge excursion lines and bought some used tracks on the initial Maine two-footers. I came home with an HO 2-8-0 Forney. In fact, in the hopes of saving of an 4 inch apiece and that.

After's a lot was therefore like a real estate agent planning an overhead acceptance of an offer for a nice home. We planned an extensive Maine's Sandy River & Rangeley Lakes RR in HO.

The law of diminishing returns also played a factor. A model railroad plans involves a great effort to make a huge investment of time, and/or money to make small improvements. We are telephone likelihood, the work may turn to include a considerable hobby. Control systems, complete with detection and signals, and then into up the 4'10" machines. I decided that modeling a striking location presented a "dark" interested and even under railroads rounded like ones that.

And a 1881 locomotive which is found on several explored and roads, but dressed that a 4-6-0's specialized. And any obvious improvements in HO request something roughly now offers from to interest. It's fully assembled

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SOUNDTRAXX

Trackside Photos

It's another day at the office for the maintenance crew on Richard Bourgeois's HO scale Timberline RR. The maintenance office is an Evergreen HO kit, and the work car is a Tichy Train Group kit. The photo was shot by Richard, of Nobleville, Ind., who also took the picture that won MR's 29th photo contest in 2007.

Want to see your work in Trackside Photos?

Consider it! Send a 3-4 picture file (no work of larger dimensions) explaining the photo, and a brief description of what's going on in the picture (the name, scale, and scale of the layout, and information about the railroad) to us via e-mail. For a copy of our photo submission guidelines, contact editorial assistant Eric Hansburg at eric.hansburg@kalmbach.com.

Ron Sjokvist of Laguna Niguel, Calif., models Southern California's Capon Pass in the 1950s in N scale. Ron snapped this photo of painted Burlington Northern and Santa Fe power leading a manifest freight through Travel Ranch—west of Victorville, Calif.

Trackside Photos

Ohio & Northeastern no. 706, a patched-out ex-Gulf, Mobile & Ohio GP35, moves in to pick up a boxcar at the Lemley Hot Air and Gas Co. near Strongsville, Ohio. The action takes place on the HO-scale layout built for Harry Crouch of Toledo, Ohio.

The California Zephyr eases up to the platform in front of Stephen Hayes' HO-scale model of Union Station at Salt Lake City, which served the Western Pacific and the Denver & Rio Grande Western. Stephen, of Scottsville, Calif., scratchbuilt the station from styrene, aircraft plywood, and solder, working from prototype photographs and on-site measurements. He also took the photo.

The New River Mining Co. in Woodlake, W.Va., is a 2rl mine operation on the HO-scale L&N RR, a freelanced translation rare line built by George Woodworth of Atlanta. Here, a switcher spots empties at the tipple.

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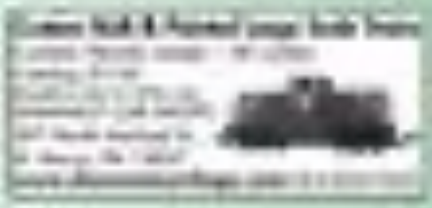

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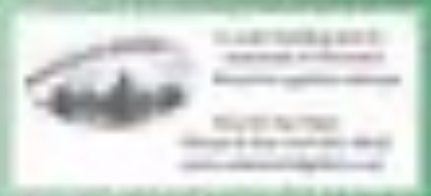

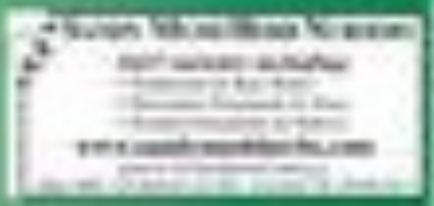

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Not all black and white

Looking at photos taken before 1950, it's easy to imagine the entire world was painted black, white, or some shade of gray. Prior to 1949, though, when the Navy completely ordered everything painted black, the steam locomotive could get pretty colorful. The one factor was the most amazing machine of its day, so the engineer and fireman always made sure to take good care of their charge, wiping it down after every run.

KATO

N SCALE

BNSF: Plying the Powder River Basin

THE EMD SD70MAC AND BETHGON COALPORTER

The Prototypes

The EMD SD70MAC has been a mainstay of the US Freight industry since its introduction in the early 90's, with more than 1500 of these locomotives being produced. Likewise, the **Bethgon Coalporter** has enjoyed wide success delivering precious "black diamonds" for use in essential electricity and heating services. The BNSF transports loaded coal trains from the Powder River Basin in Wyoming, usually behind several SD70MAC locomotives as the trains can stretch up to more than a hundred cars in length, and sometimes even employing a helper locomotive at the rear to move the precious cargo.

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